AIR CONDITIONING SYSTEMS

Models:
ICI-12
ICI-18
ICI-24
ICI-36
ICI-45
ICI-50

inventor®
Your-conditions

Casette Unit

Owner's Manual

inventor®
Your-conditions

66129903850

Thank you for choosing INVENTOR air conditioning system. For correct use of this unit, please read this manual carefully and keep it for future reference.

CONTENTS

1、Names and functions of parts……....1

2、Safety cautions……3

3、Wire controller……5

4、Remote control operation procedure……13

5、Weekly timer……23

6、Optimum operation……33

7、Trouble shooting……..34

8、Installation notes……36

9、Care and maintenance……37

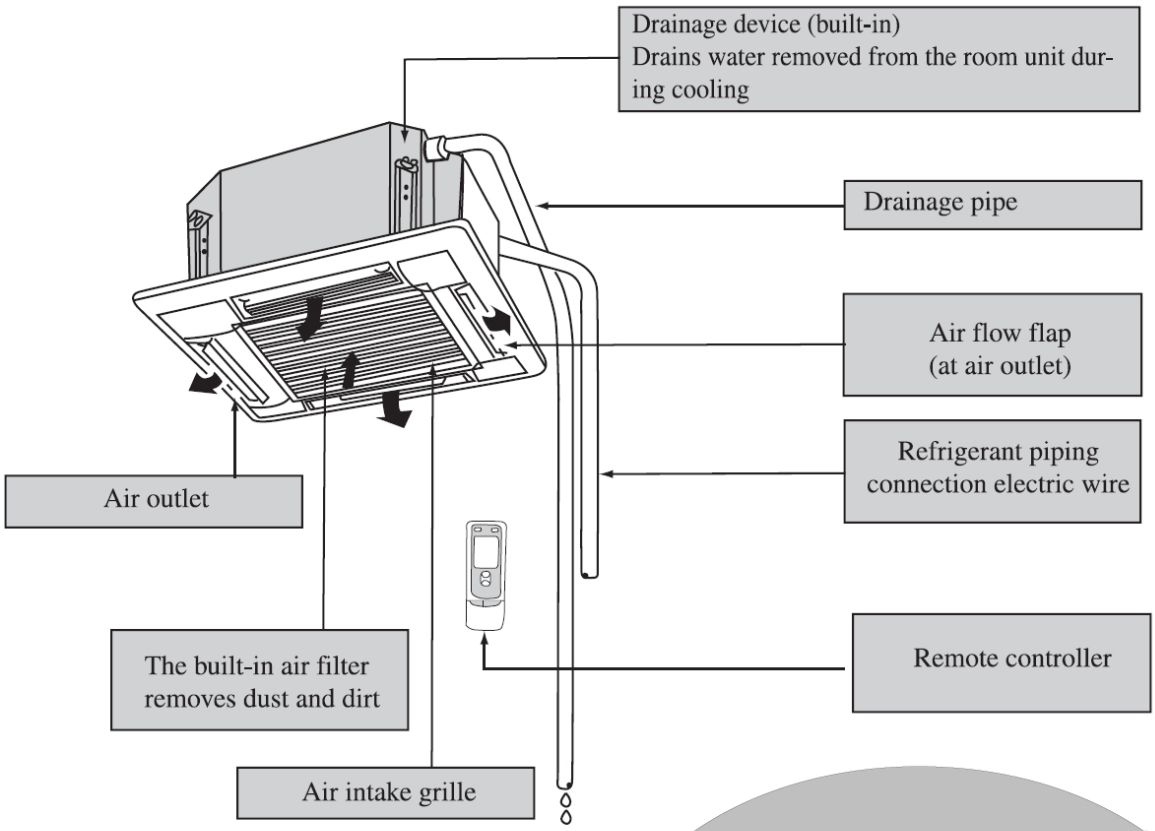
10、Instructions of unit installation……38

11、Test operation……58

Appendix……...…60

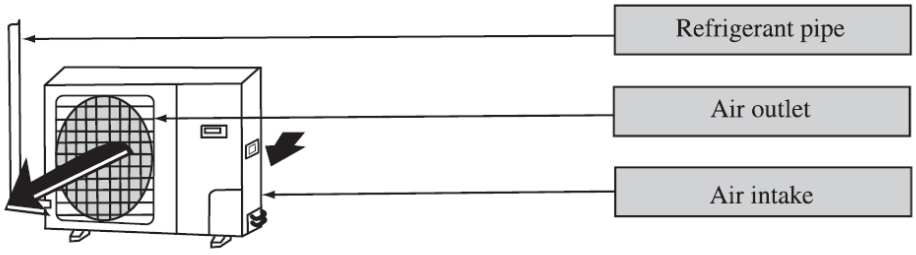
1.Names and functions of parts

Indoor unit

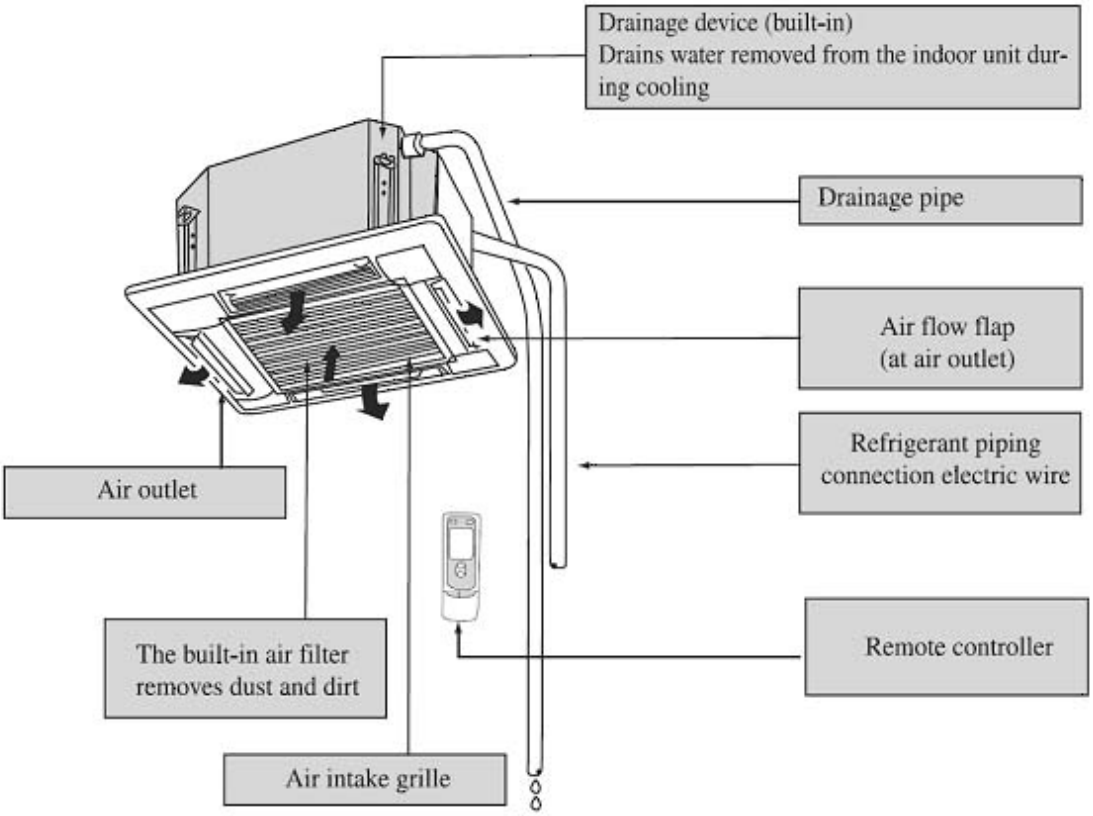


Outdoor unit

ULS 12 ICI-12
ULS 18 ICI 18
ULS 24 ICI 24



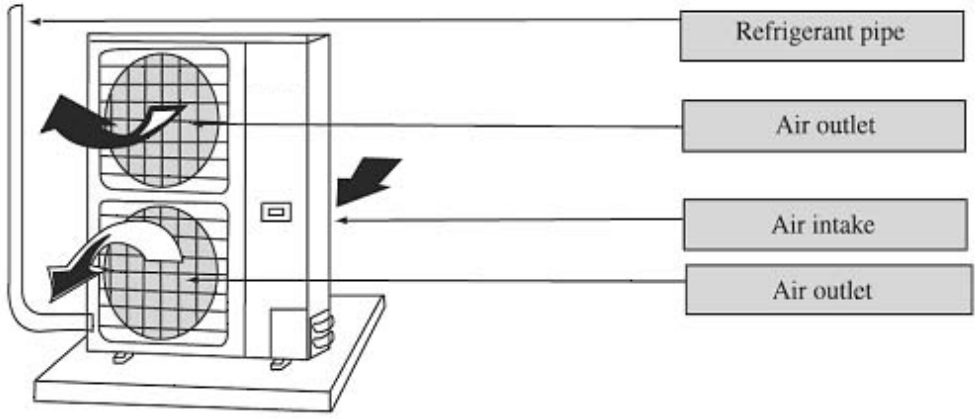
Indoor unit



Outdoor unit

ULS 36 ICI 36

ULT 36 ICI 36
ULT 45 ICI 45
ULT 50 ICI 50



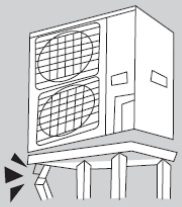
2、Safety cautions

●Read the following carefully to assure safe use.

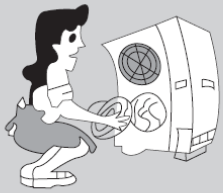
Warning

Avoid direct air flow to your body and avoid excessive heating or cooling,which may make you feel uncomfortable and do harm to your health.

Check whether the installed stand is still firm enough after the unit has operated for a long time.
If a worn-out stand is left unfixed,the unit may topple and do harm.

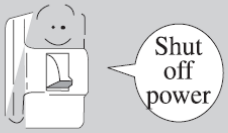


Do not remove protection grill nets from the outdoor unit.
Do not reach hands or insert anything into the unit air outlet.



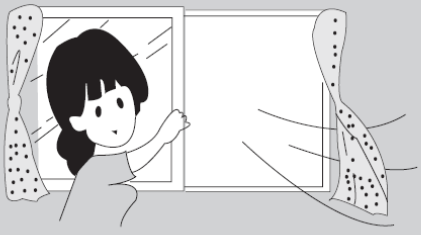
Do not stand on the outdoor unit or put anything on it, or you may fall down or people may get hurt by the falling things.

If there is something abnormal (eg.burning smell), cut off the power immediately and contact service center.

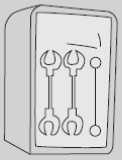


Do not spray any paint or pesticide on the unit, or it may cause fire.

If room air is stuffy, air the room by opening door and window for a while, but please close the curtains when operating the unit to prevent conditioned air from leaking.



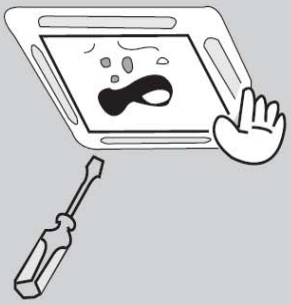
Never use wrong ampere rating fire.
Use of iron wire or copper wire may cause the unit to break down or cause fire.



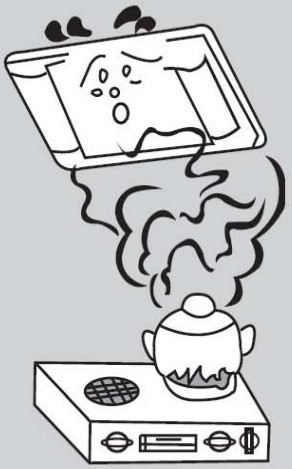
NOTE: Children should be supervised to ensure that they do not play with the appliance.

Warning

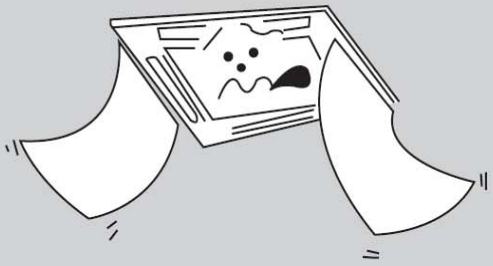
Do not check or repair during the unit is operating. It is very dangerous.

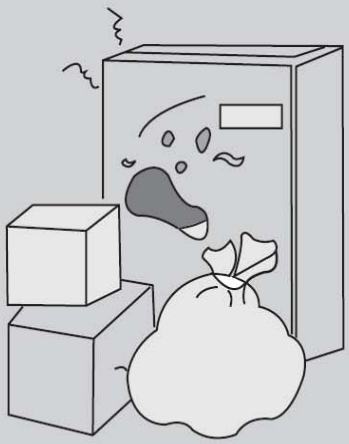


Do not use other heating equipment near the air conditioner.
It will affect the cooling performance.



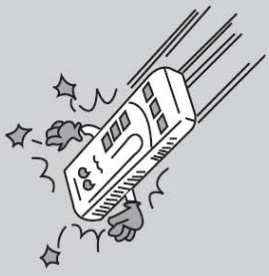
Never place objects near the air intake and the air outlet of the unit.
It may affect performance or stop operation of the unit.





Do not splash water directly to indoor unit
It may cause trouble or electric shock.

Do not bang the remote controller.and do not press the button of the remote controller with pointed object, or the remote controller may be damaged.



NOTE: This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

3、Wire controller（standard fitting）

WARNING!

Never install the wire controller in a place where there is water leakage.

Avoid bumping, throwing, tossing or frequently opening the wire controller.

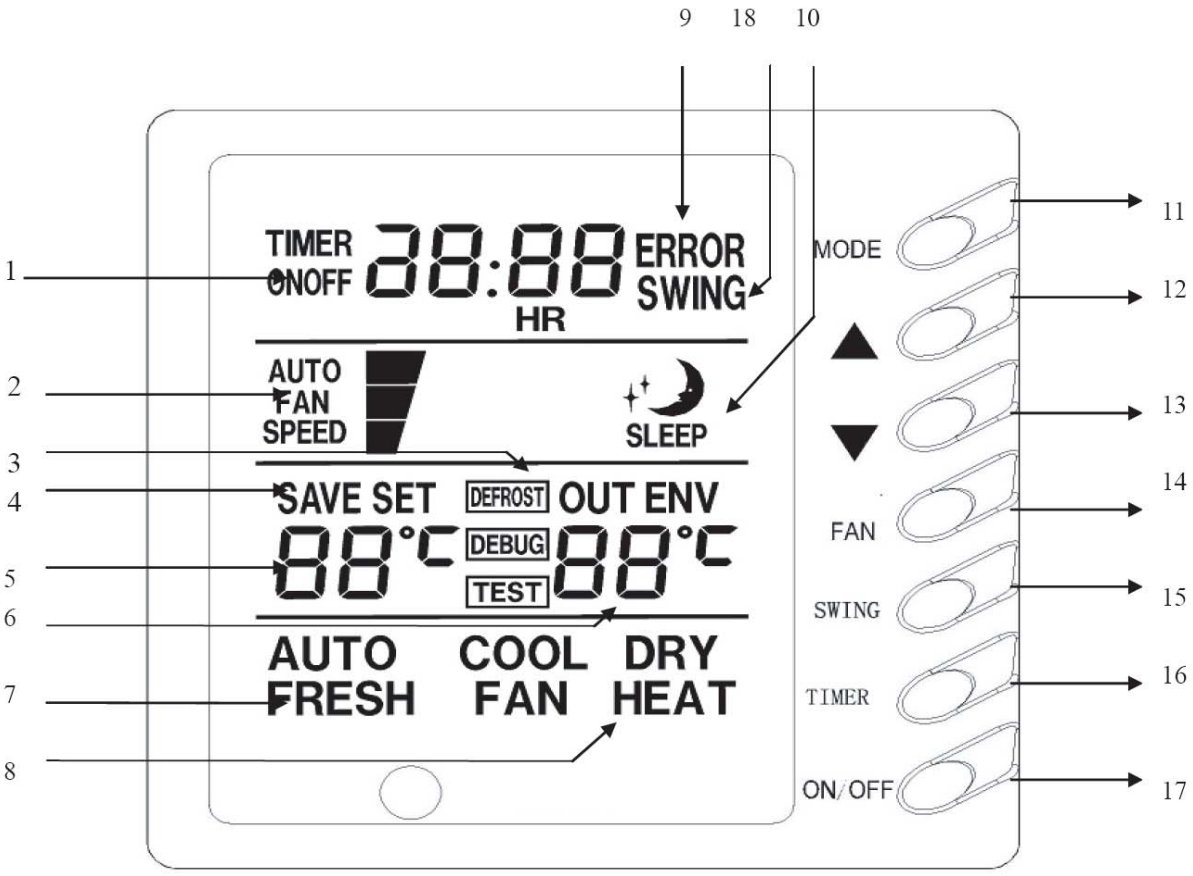


Fig.1

Each part of the manual controller			
1	Timer display	10	Sleep display
2	Fan speed display (Auto, High, Middle, Low)	11	MODE button
3	Defrosting display	12	Button for temp. increase
4	Saving state display	13	Button for temp. decrease
5	Set temp. display	14	FAN button
6	Ambient temp. display	15	SWING button
7	Fresh air display	16	TIME button
8	Mode (COOL, DRY, FAN, HEAT, AUTO)	17	ON/OFF button
9	Malfunction display	18	Display of Swing state

1) ON/OFF (Fig.2)

★ Press this button the unit will start.

★ When repress the button, the unit will stop running.

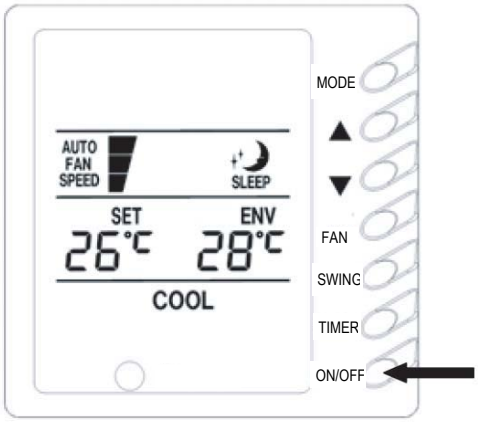


Fig 2

2) Fan control(Fig. 3) (The relevant contents are shown in the figure.)

★ Press this button to change the fan speed of:

→LOW→MID→HIGH→AUTO

★ At the DRY mode: the fan speed will be set for low fan speed automatically.

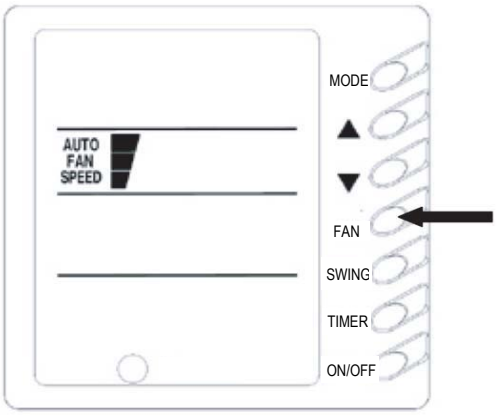


Fig 3

3) Temperature adjustment(Fig.4)

★ Press the temperature adjustment button

▲：For temperature increase;

▼：For temperature decrease.

(Press this button once, the temperature will be increased or decreased by 1℃.)

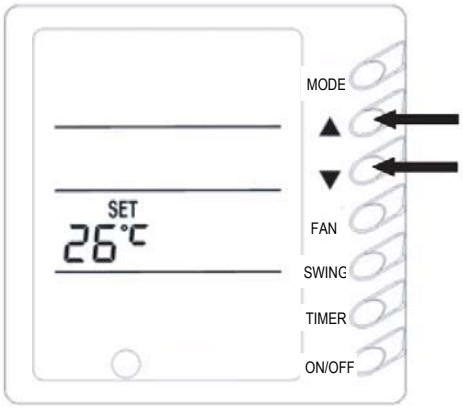


Fig 4

NOTE: Lock function: Press "▲" and " ▼" at the same time for 5 seconds, the set temp. indicating area shall display "EE" and all keys' response shall be shut off, all buttons will sound; and repress the "▲" and " ▼" simultaneously for 5 seconds, the lock function will be released. When the displayer of long-distance monitoring or central controller has been shielded, the buttons and

remote control signal will be shielded too, the setting temp. will display “CC”.

★ The set temperature range under each mode:
HEAT -------- 16℃～30℃

COOL -------- 16℃～30℃

DRY -------- 16℃～30℃

FAN -------- The temp. cannot be set up

AUTO -------- The temp. cannot be set up

4）Swing mode set up(Fig.5)

★ When pressing “SWING" button, the type style "SWING" will be displayed on LCD, the unit will run in Swing mode

★ when repressing the “SWING” button, that the type style "SWING" will be disappeared, and the unit will stop running in Swing mode.

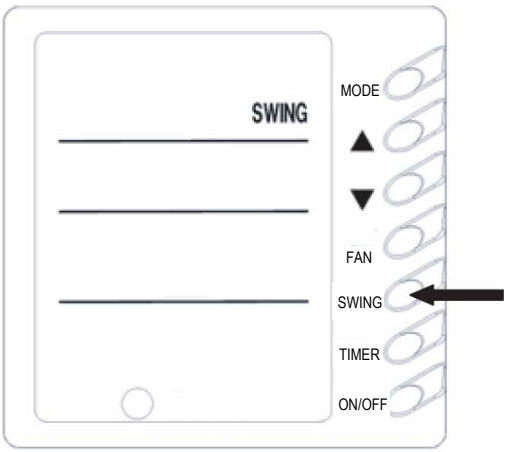


Fig 5

Note: The SLEEP function could be set up by wireless remote control.

5) Running mode setup(Fig.6)

★ When press this button once, the operation mode will be changed as follow:

→ COOL→ DRY→FAN→HEAT →AUTO

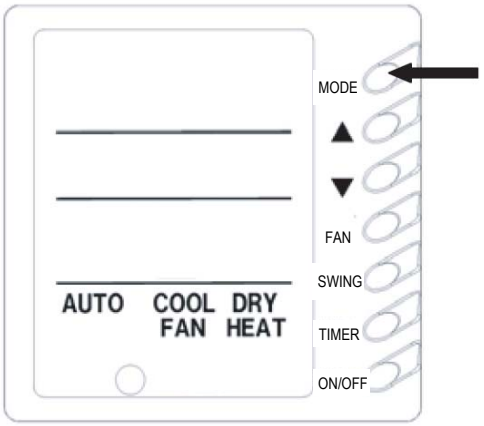


Fig 6

★ At “COOL” mode, the “COOL” icon will light on, the current temperature should be set up lower than the ambient temperature. If the setting temperature is higher than the ambient temperature, the COOL mode will not start, only the fan is active.

★ In “DRY” mode, the “DRY” icon will light on. The inner fan will run at low fan speed in a certain range. This DRY efficiency in this mode is more obvious than the one in COOL mode, and the power saving efficiency is better.

★ In “HEAT” mode, the “HEAT” icon will light on. The setting temperature should be set up higher than the present temperature; if it is lower than the present ambient temperature, the HEAT mode is unavailable.

★ In “FAN” mode, the “FAN” icon will light on.

★ In “AUTO” mode, the “ AUTO” icon will light on, according to the ambient temperature, the unit will automatically adjust the running mode.

★ In “HEAT” mode, when the outdoor temperature is lower and high humidity, and it frosted in outdoor unit, and the heating efficiency will be reduced. If it is in this case, the controller will start defrosting automatically, and displays “DEFROST” icon.

NOTE: There is no HEAT mode in the cooling only unit, after the power saving set up, the auto mode will be shielded.

6) TIMER setup (Fig. 7)

At unit turned off, the timer on could be set up, at unit turned on, the timer off could be set up. After pressed the “TIMER” button, the unit could be set up, and the TIMER icon flashes, by pressing the buttons “▲”,“▼” could increase or decrease the time of timer, when repress the “TIMER” button, the Timer is valid, the units will start calculate the time. When the unit is in the TIMER, press the “TIMER” button could cancel the time.

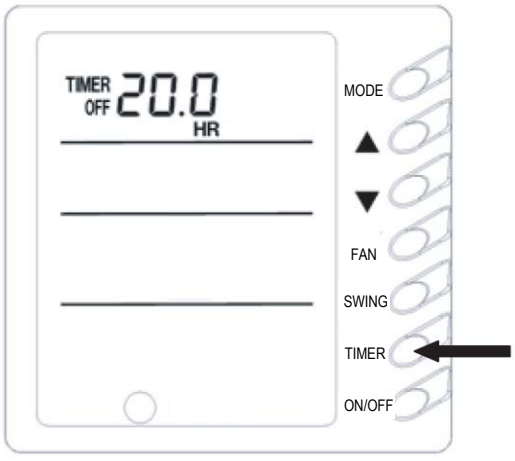


Fig 7

NOTE:

When the protection or malfunction happens after the timer on was set up, the time place will display the protection or the error codes, the timer button cannot be setup, but the time you have setup before is still available.

7) Outer ambient temperature display (Fig. 8)

Under normal condition, “ENV” will display the room ambient temperature, at unit turned on, or unit turned off status, press “SWING” button last for 5 seconds, the LCD will display “OUT ENV”.

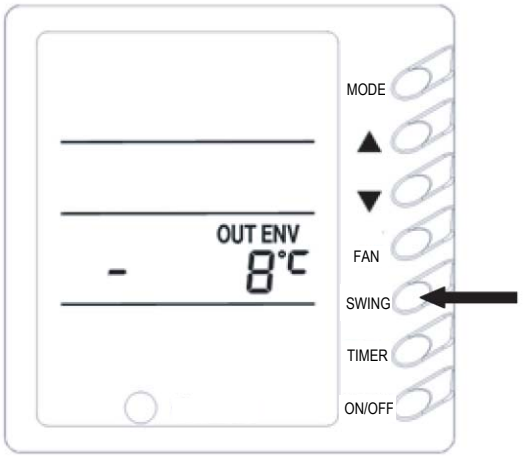


Fig 8

① If tested the outdoor temperature is the positive value, that the setting temperature will not be displayed, the original environment temperature displayer displays the system internal tested outdoor environment temperature.

② If tested the outdoor temperature is the negative value, the original environment temperature displays the system inner tested the absolute value of the out environment. After displayed the outdoor environment temperature 10 seconds later, the system will back to the room ambient temperature displaying surface.

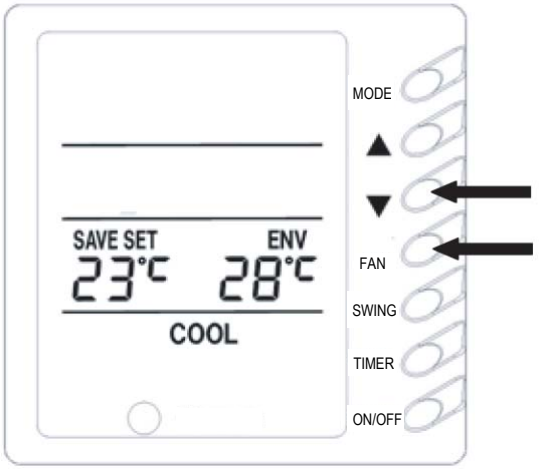


Fig 9

NOTE: If the unit has been unconnected with the outdoor ambient sensor, this function will be unavailable.

8) SAVE set up (Fig.9)

At unit turned off, to press the “FAN” +“▼” buttons continuously for 5 seconds, adjust the Saver set menu, at this time displays “SAVE” “COOL” icons, (if it is the first setup, that will display the initial value:26℃), at the temperature setting district, it displays the lower limit temperature,and the set temperature flashes, by pressing“▲”and“▼”buttons to set the cooling temperature lower limit (the setting range is 16~30), press “ON/OFF” button to confirm; by pressing “▲” and“▼”

buttons to set cooling temperature upper limit, it will flash and display at ambient temperature, (the setting range is 16-30) , and press “ON/OFF” button to confirm.

NOTE: The upper limit temperature should not be lower than the setting lower limit temperature. If upper limit temperature is lower than the lower limit temperature, the system will default. The higher is the upper limit temperature, the lower is the lower limit temperature. Press “MODE” button, to complete the save setting in COOL, DRY mode, and transfer to the save setting in HEAT mode (There is no the function in cooling only unit), at this time, it displays the “SAVE”, “HEAT” icons, after setup has been completed, then press “FAN” +“▼” button last for 5 seconds, and quit the SAVE setting operation. If the SAVE interface has been opened, the system will respond to the last button input after 20 seconds, there is no any operation, the system will quit the menu, and displays the normal unit off interface.

The above setting has been completed, the system will display ”SAVE” icon, no matter by buttons on displayer or the wireless remote control, the setting temperature should not exceed the former SAVE setup temperature range, for example as show in Fig. 9, we set up the cooling lower limit is 23℃ in SAVE setting, the upper limit is 27℃ , the user can set the cooling temperature between 23℃ to 27℃ by the wireless remote control and buttons on displayer.

If the set up upper limit temperature is the same with the lower limit temperature that the system only can run at the corresponding modes at the set temperature.

After the SAVE mode set up, at unit turned off, press the “FAN” +“▼” buttons for 5 seconds, will quit the SAVE setting function, but the former setting data will not clear, and the next time SAVE setting will be the initial setting temperature.

After powered off, the SAVE setup function will be memorized, the next time power on, the SAVE setting is still active.

Set up the SAVE mode, the SLEEP, AUTO modes will shield.

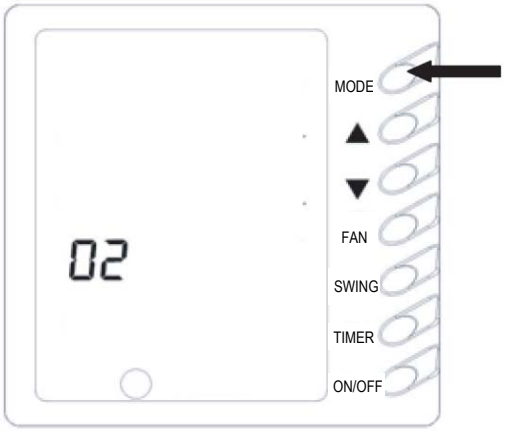


Fig 10

9) MEMORY function setup (Fig. 10)

Press and hold the “MODE” key for 10 seconds when the unit is shut off to switch set values so as to decide if the unit operating status or shut off status shall be memorized after a power fail. If the set temperature area displays 01, it means the unit operating status or shut off status shall be memorized after a power fail; 02 means the operating status or shut off status shall not be memorized. Press the "ON/OFF" key to store the set value and exit the seting.

10) Malfunction display (Fig.11)

When the malfunction happened during operation, the displayer will display “ERROR” icon and flash, and meanwhile will display the error code, when there are multi-malfunction happened, the displayer will display the error codes circularly. The first number denotes the system number, if there is only one system in the display, it will display the system number 1 , the following two are error codes. For example as show in right figure, that denotes the system 1, low-pressure protection of compressor.

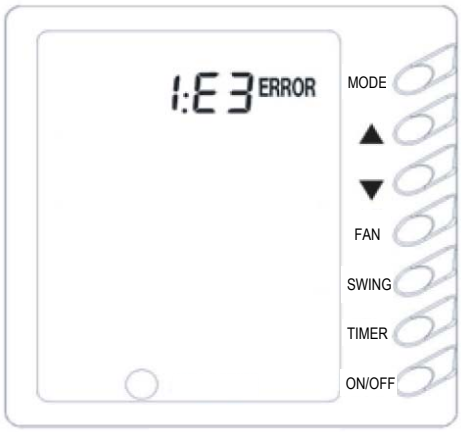
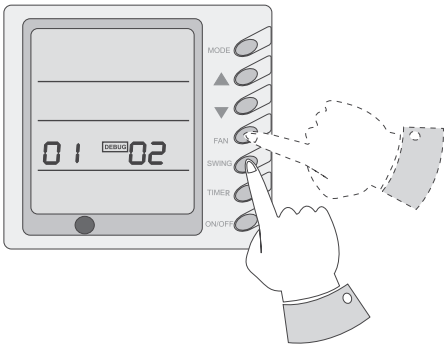


Fig 11

The meaning of error codes as show in below:

Error code	Malfunction
E0	Water pump malfunction
E1	High pressure protection of compressor
E2	Indoor anti-frozen protection
E3	Low pressure protection of compressor
E4	Air discharge high-temperature protection of compressor
E5	Overload protection of compressor
E6	Transmitmalfunction
E8	Indoor fan protection
E9	Water flow protection
F0	Malfunction of indoor environment sensor at air return vent
F1	Evaporator sensor malfunction
F2	Condenser sensor malfunction
F3	Outdoor environment sensor malfunction
F4	Malfunction of air discharge sensor
F5	Malfunction of environment sensor on displayer

11) Debug Function Setting

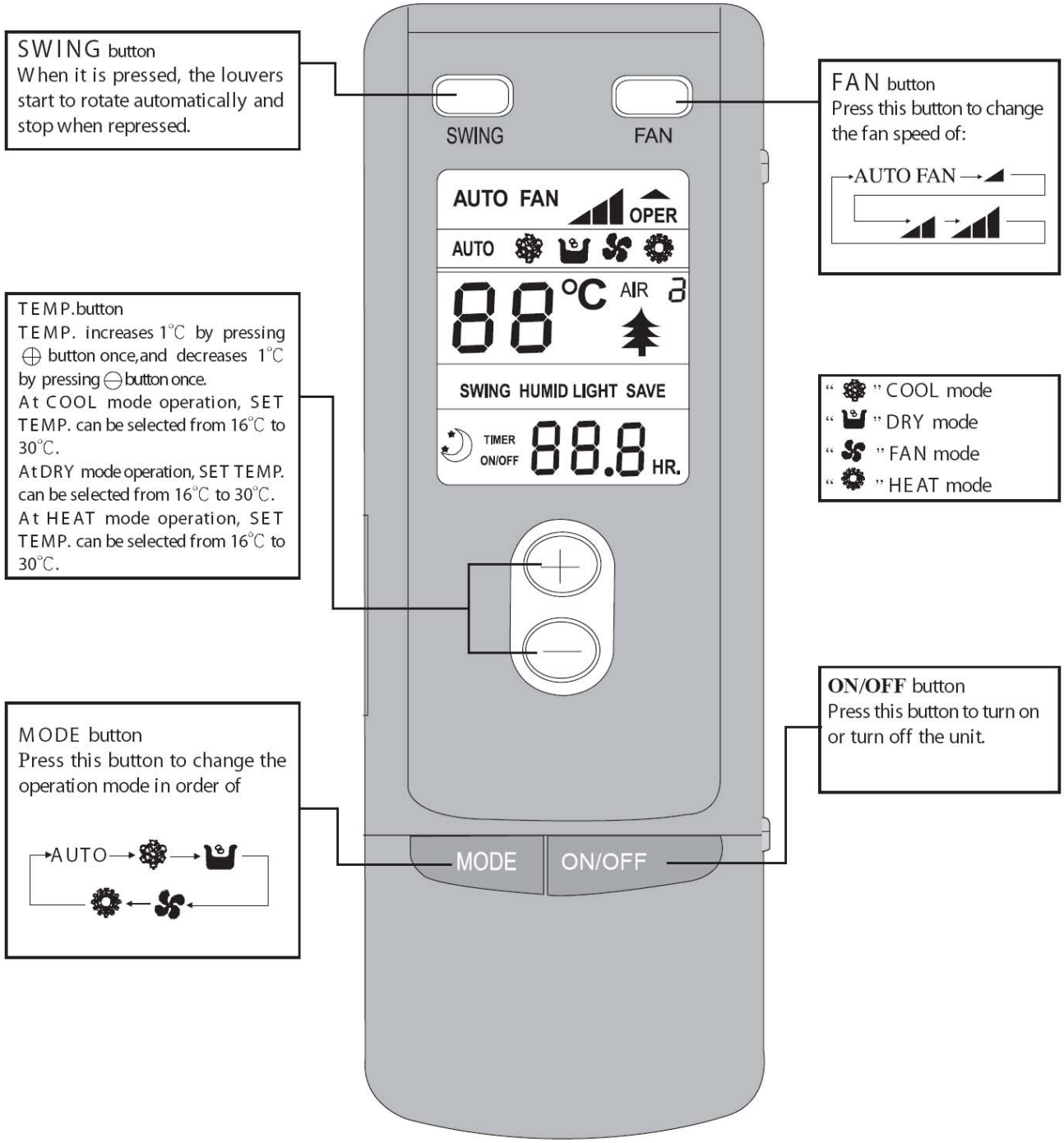
Debug Function Setting	
	When the unit is shut off, press the “FAN” key and the “SWING” key Simultaneously to activate the debug menu. Now the LCD displays “DEBUG”. Press the “MODE” key to select setting item and use the(▲) key or the (▼) key to set actual value. Setting of Ambient Temp. Sensor Under the debug mode , press the “MODE” key so as to display “01” On the set temperature area (at the left of “DEBUG”). The OUT ENV area (at the right of “DEBUG”) displays setting status. Now use the (▲) key or the (▼) key to select from the following two settings: The indoor room temperature is measured at the air intake(Now the OUT ENV area displays 01). The indoor room temperature is measured at the wire controller (Now the OUT ENV area displays 02). The indoor room temperature is measured at the wire controller when the mode is 'heating' or 'auto'. At other modes, it is measured at the air intake (Now the OUT ENV area displays 03) ,The default is 03.

4、Remote control operation procedure（standard fitting）

★ Name and Function-Remote Control

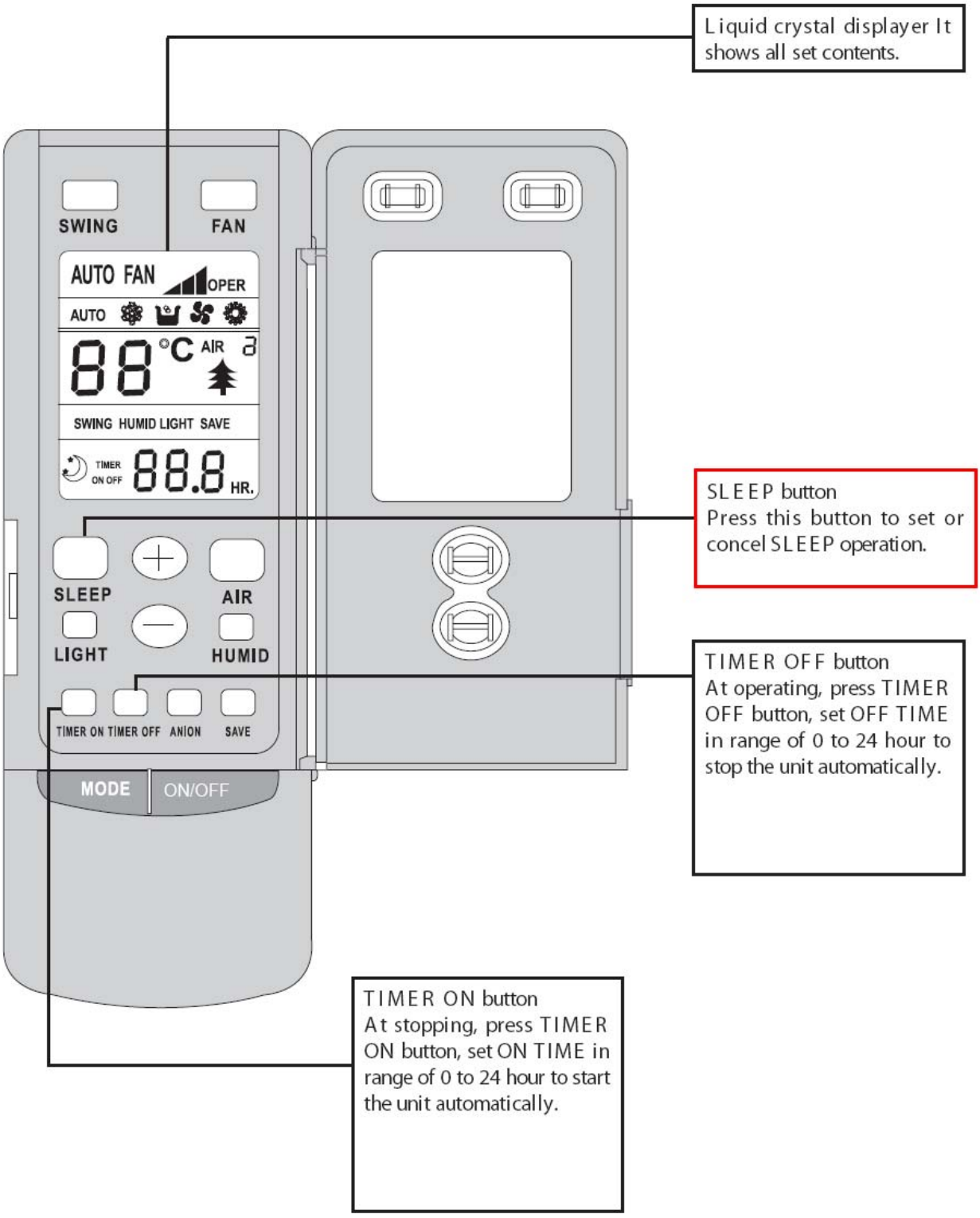
Note:

- Be sure that there are no obstructions between receiver and remote controller.
- Don’ t drop or throw the remote controller .
- Don’ t let any liquid in the remote controller and put the remote controller directly under the sunlight or any place where is very hot.


SWING button
When it is pressed, the louvers start to rotate automatically and stop when repressed.
FAN button
Press this button to change the fan speed of:
AUTO FAN
TEMP.button
TEMP. increases 1℃ by pressing ⊕ button once,and decreases 1℃ by pressing ⊖ button once.
At COOL mode operation, SET TEMP. can be selected from 16℃ to 30℃.
At DRY mode operation, SET TEMP. can be selected from 16℃ to 30℃.
At HEAT mode operation, SET TEMP. can be selected from 16℃ to 30℃.
" " COOL mode
" " DRY mode
" " FAN mode
" " HEAT mode
MODE button
Press this button to change the operation mode in order of
AUTO
ON/OFF button
Press this button to turn on or turn off the unit.
SWING
FAN
AUTO FAN
OPER
AUTO
88 ℃
AIR
SWING HUMID LIGHT SAVE
TIMER ON/OFF
88.8 HR.
MODE
ON/OFF

★ Name and Function-Remote Control. (Remove the cover)

Note: This type of remote controller is a kind of new current controller. Some buttons of the controller which are not available to this air conditioner will not be described below. Operate on unmentioned buttons would not impact on the normal use.



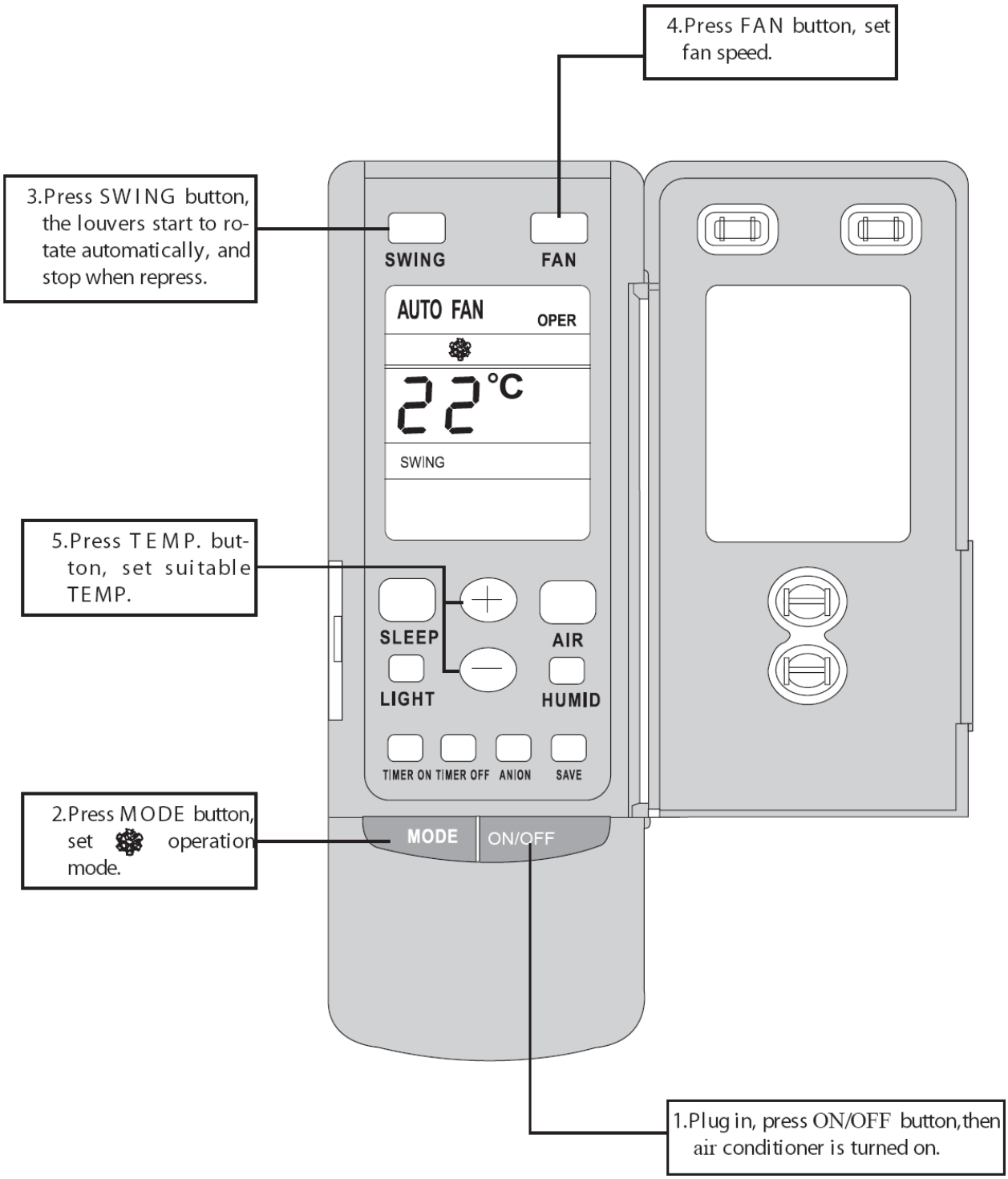
★ COOL mode operation procedure

● According to difference between room temp. and set temp., microcomputer can control cooling on or not.

● If room temp. is higher than set temp., compressor runs at COOL mode.

● If room temp. is lower than set temp., compressor stops and only indoor fan motor runs.

Set T EMP. should be in range of 16℃ to 30℃.

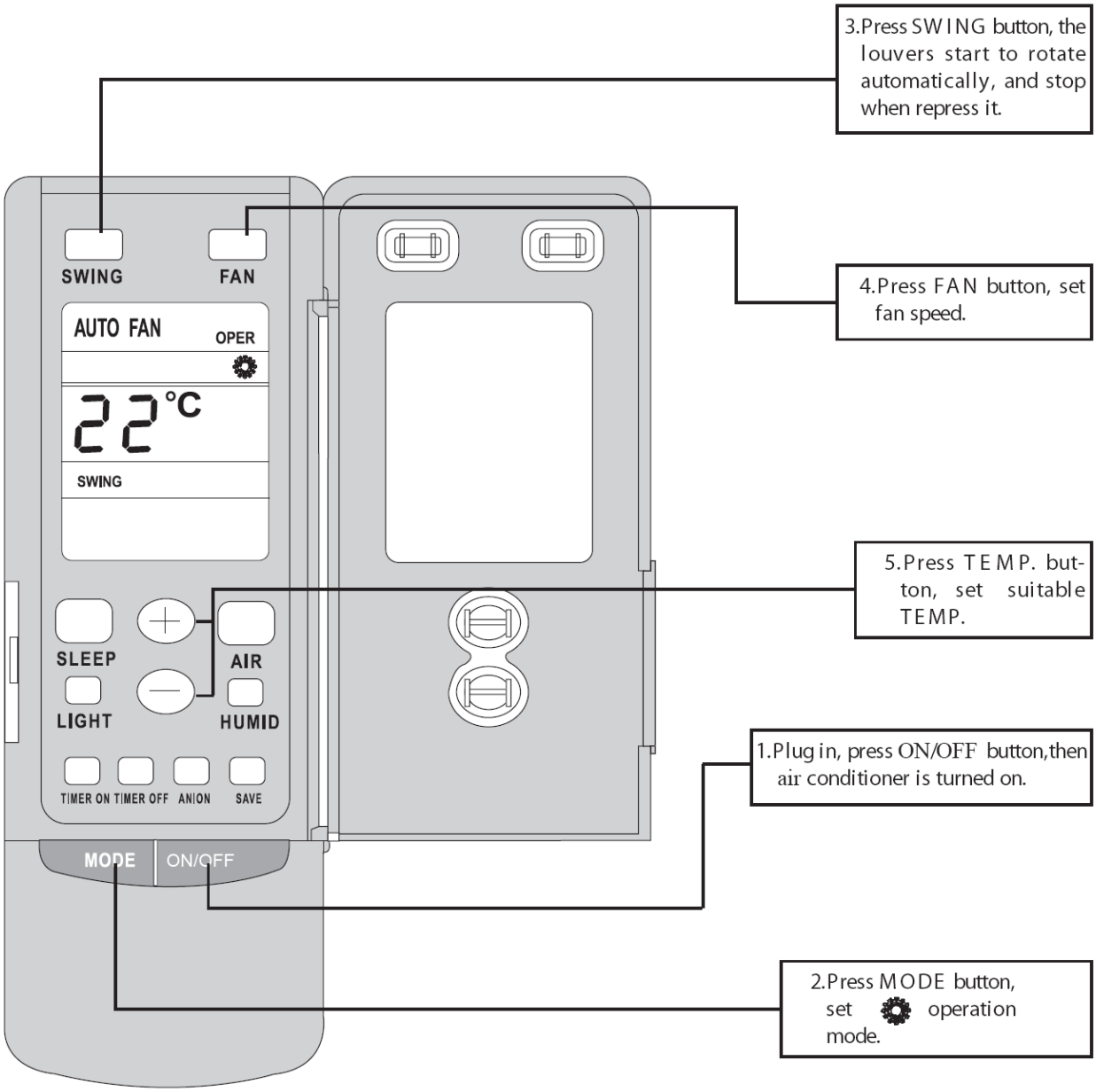


★ HEAT mode operation procedure

●If room temp. is lower than set temp., compressor runs at HE AT mode;

●If room temp. is higher than set temp., compressor and outdoor fan motor stop, only indoor fan motor runs.

●Set T EMP. should be in range of 16℃to 30℃

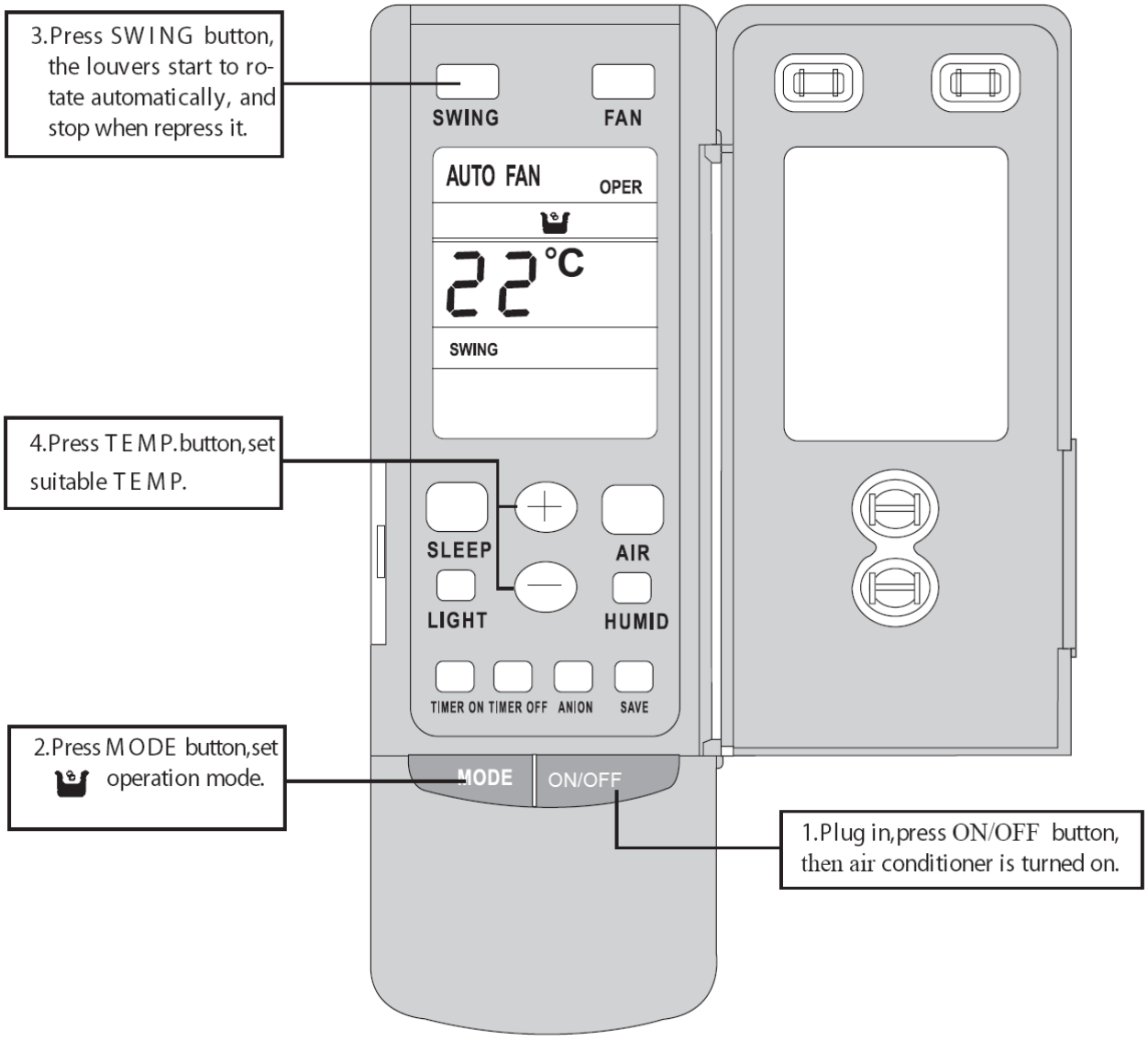


★DRY mode operation procedure

● If room Temp. is more than 2℃ below Set TEMP. , compressor and outdoor unit fan motor stop, indoor unit fan motor runs at low speed.

● If room Temp. is between ±2℃ of Set TEMP. , the compressor and outdoor unit fan motor will run for 6 minutes and stop for 4 minutes, and always in such a cycle, the indoor unit fan motor will run at low speed.

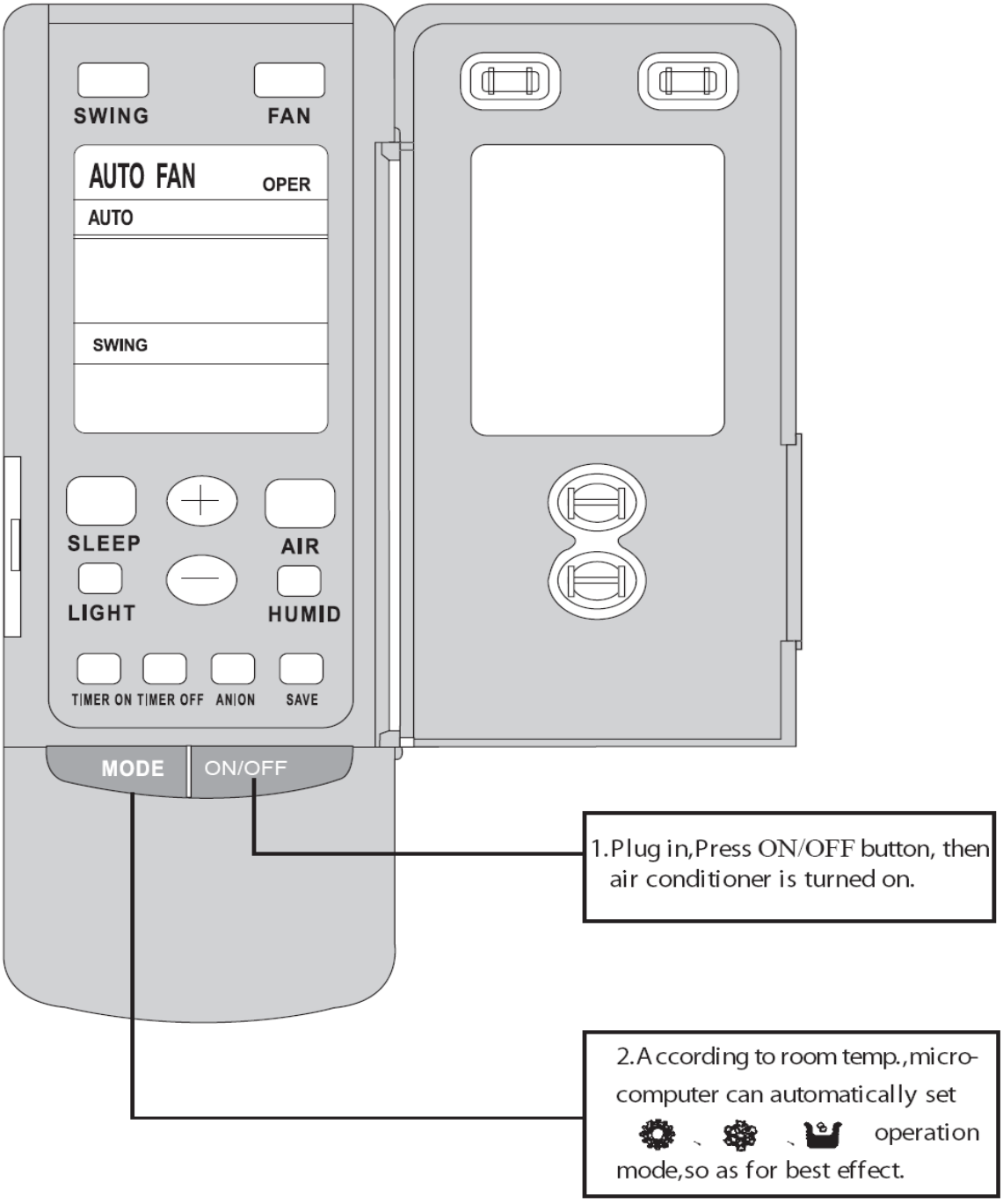
● If room Temp. is more than 2℃ above Set TEMP. , compressor and outdoor unit fan motor run as COOL mode , the indoor unit fan motor runs at low speed.



★ AUTO mode operation procedure

●According to room temp. microcomputer can automatically set COOL.HEAT.DRY operation mode, so as far best effect.

● At AUTO mode operation, standard TEMP. is 26℃ for COOL mode, 24℃ for DRY mode and 20℃ for HEAT mode.



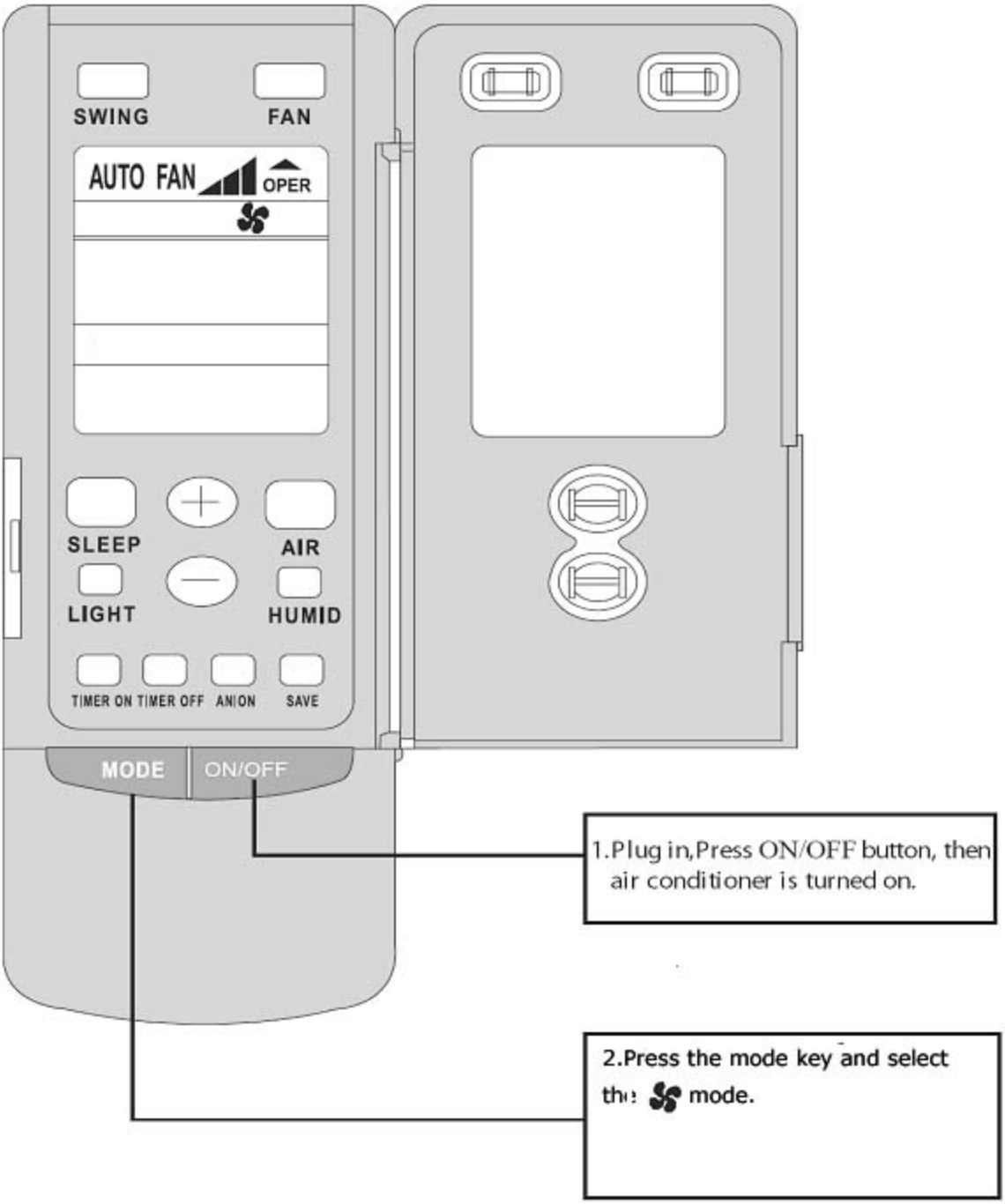
★FAN mode operation procedure

Connect the unit to power supply.

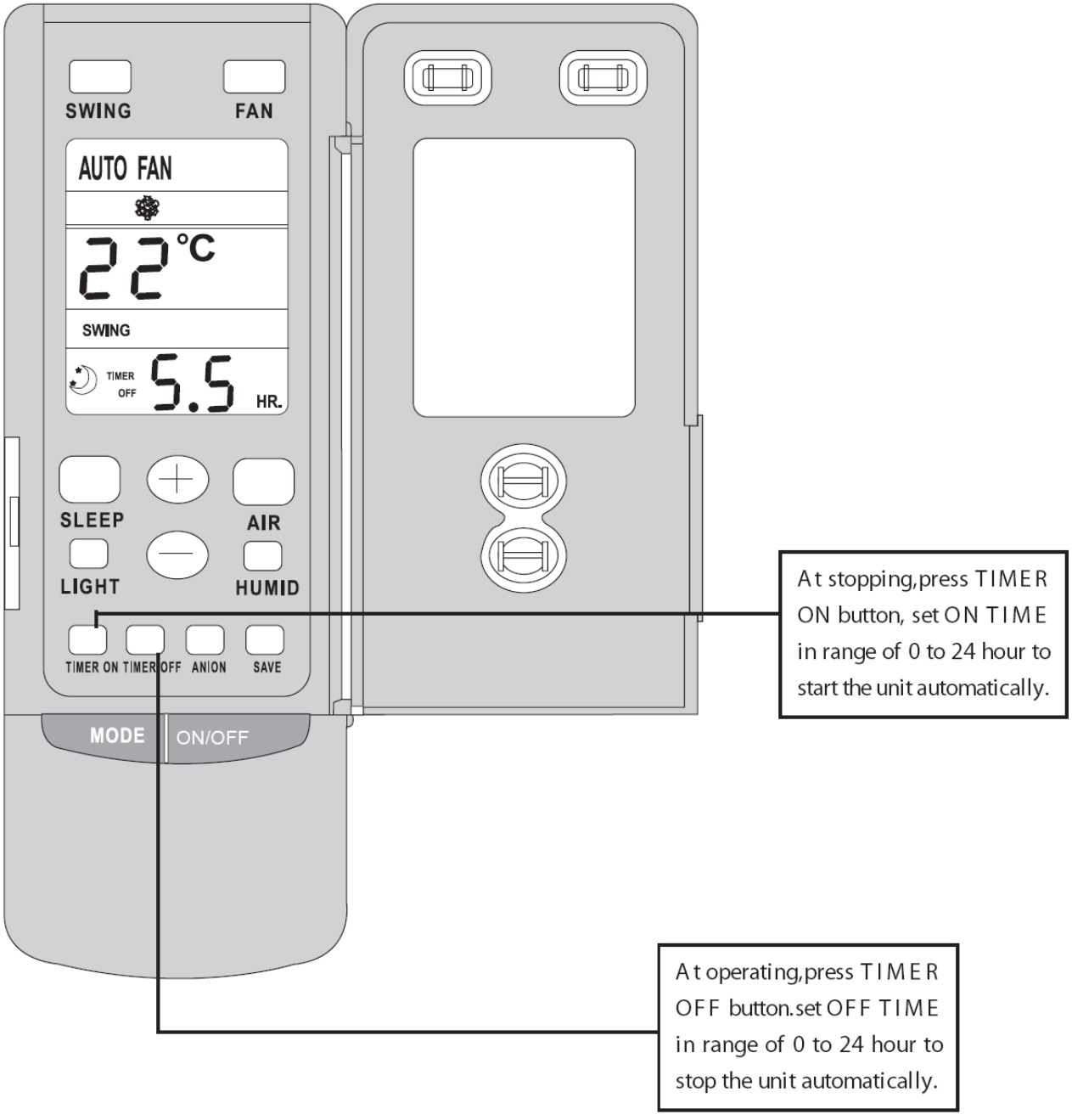
Press the “ON/OFF” key.

Press the mode key to select the “FAN” mode. The unit shall operate under “FAN” mode.

Press the “FAN” key to select from high, medium and low speed.



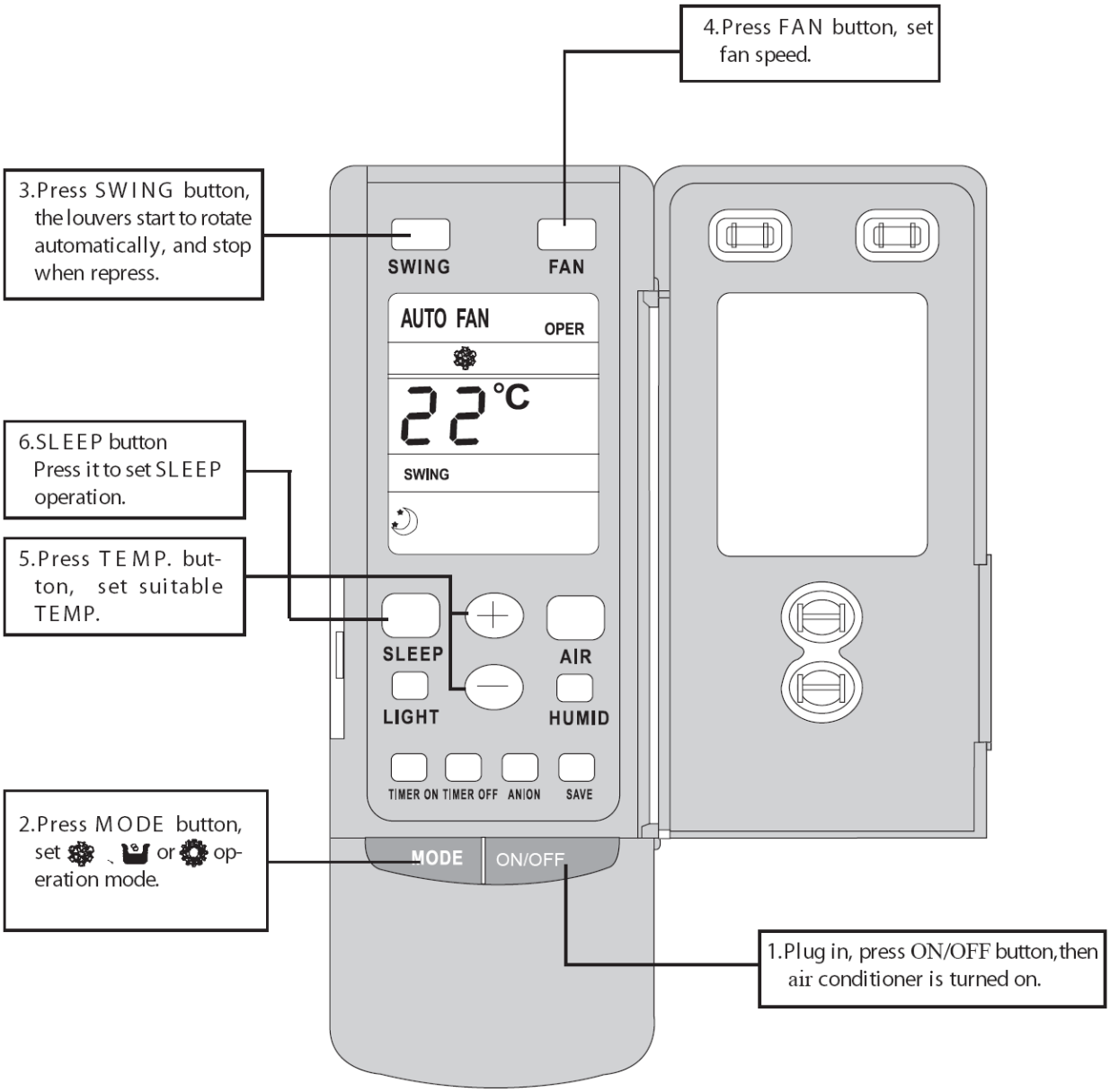
★TIMER operation procedure



★ SLEEP mode operation procedure

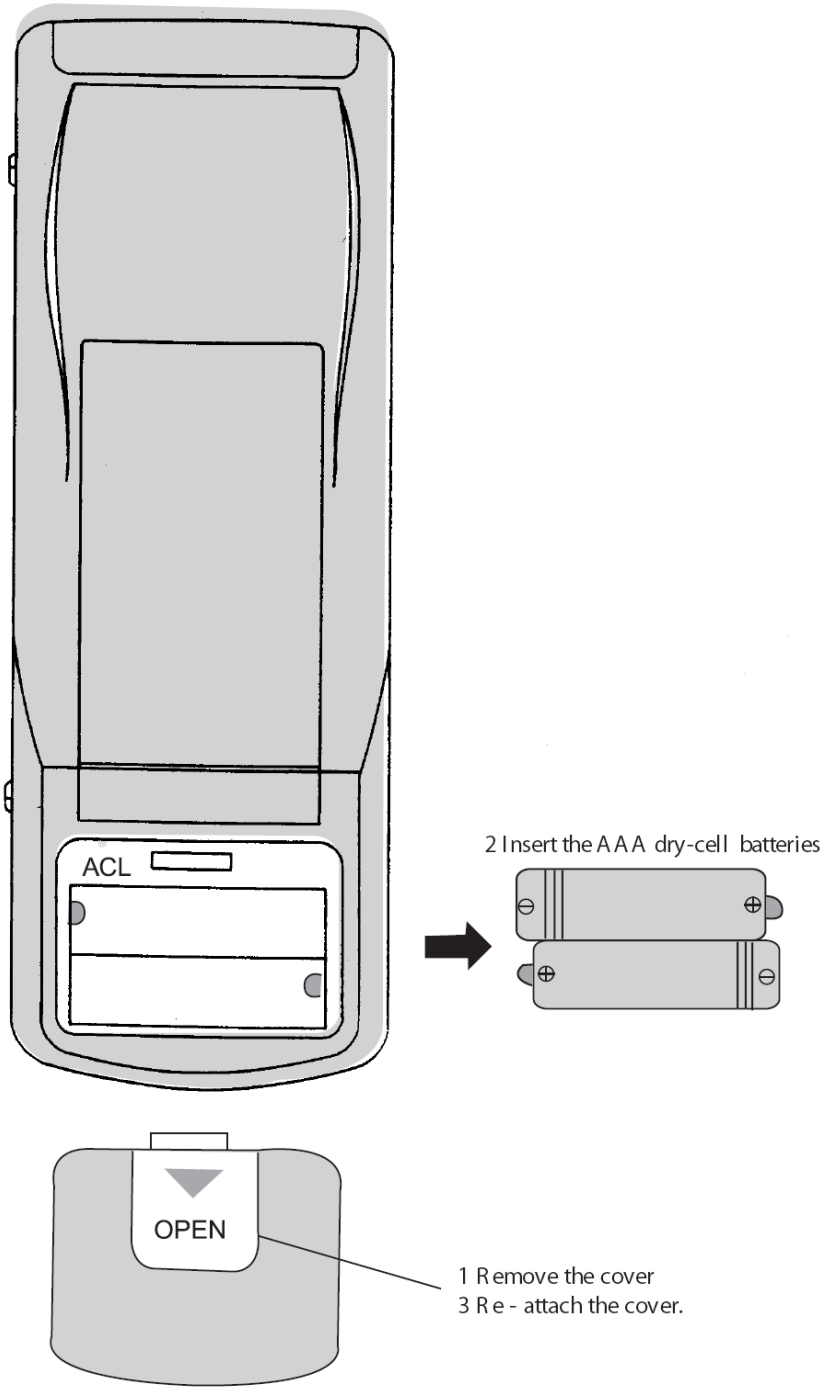
●When the unit is cooling or drying, if SLEEP operation is set, TEMP. would increase 1℃ in 1 hour and 2℃ in 2 hours. Indoor fan motor runs at low speed.

●When the unit is heating , if SLEEP operation is set, TEMP. would decrease 1℃ in 1 hour and 2℃ in 2 hours. Indoor fan motor runs at low speed.



★How to inser t batteries

1. Remove the cover from the back of the remote controller.
2. Insert the two batteries (Two AAA dry - cell batteries) and press button "ACL".
3. Re - attach the cover.



Note:

- Don't confuse the new and worn or different batteries.
- Remove batteries when not in use for a long time.
- The remote control signal can be received at a distance of up to about 10m.

5、Weekly timer（optional fitting）

★ Week Timing Controller (With Centralized Control Function)

Centralized Control and Week Timer Functions: The centralized controller and the weekly timer are integrated in the same wire controller. The system has both the centralized control and the week timing functions. Up to 16 sets of units can be controlled simultaneously by the centralized controller (weekly timer). The weekly timer has the function of invalidating the lower unit. The weekly timing function is able to realized four timing ON/OFF periods for any unit every day, so as to achieve fully automatic operation. No timing control can be set for holidays.

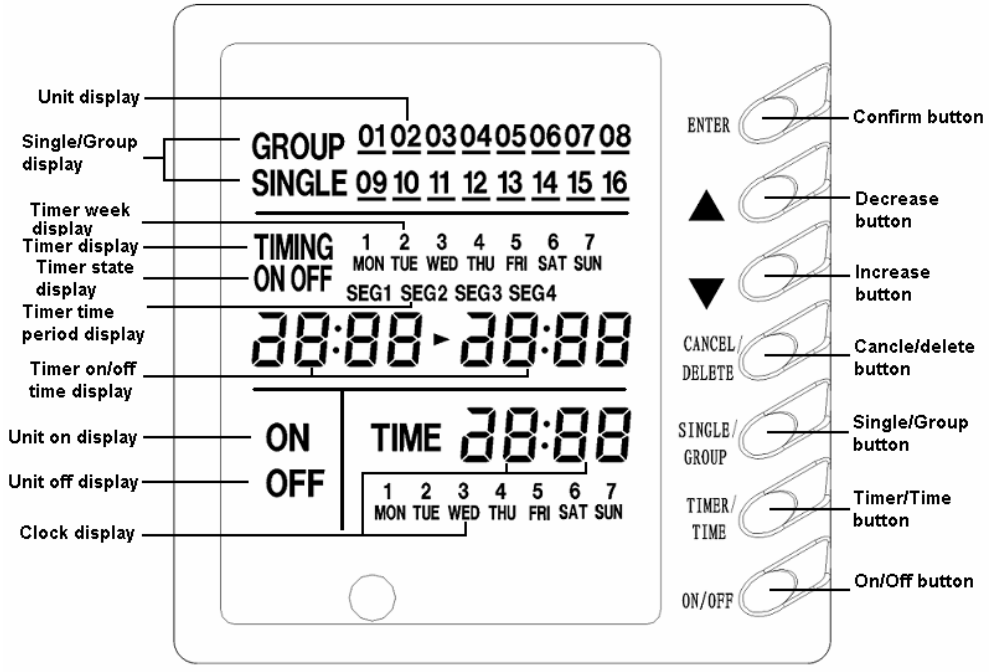


Fig.1

This WEEKLY TIMER adopts 485 mode to communicate with manual control of every duct type unit, and it can control up to 16 units. Adopting 2-core twisted-pair wire, the longest communication distance of this TIMER is 1200m. After connected to power, the WEEKLY TIMER can display all connected units (sequence of unit is determined by code switch of manual control of every duct type unit). On and off of every duct type unit can be done through the Timer On / Off of this WEEKLY TIMER, and the button shield operation of manual

control can be done through shield setting on WEEKLY TIMER. Mode selection and temperature adjustment and other operations are done through the manual control at every unit.

Note:

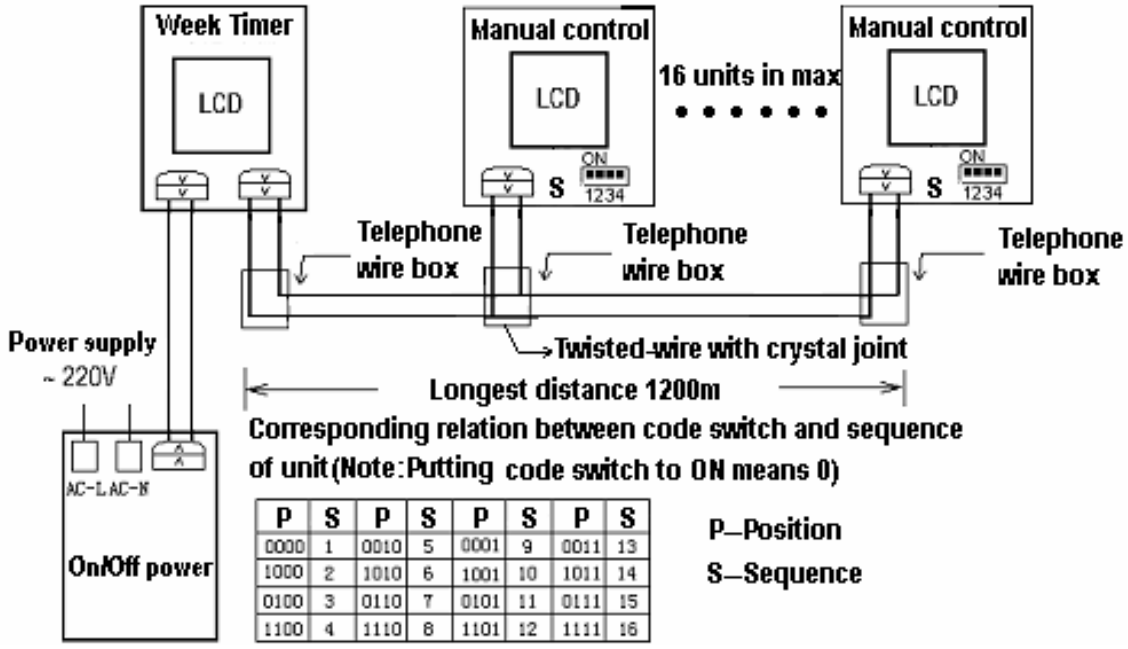
1、For upper unit checks 16 lower units consecutively, there will be no more than 16 seconds delay when setting works till unit responds.

2、Please let us know your requirement before your placing the order, for this WEEKLY TIMER will only be prepared when customer orders (communication joint with WEEKLY TIMER on manual control had been prepared).

1、Press ▲ or ▼ to select the unit that needed to be control. It is available to control several units by Group Control (1~16), or control single unit by Single Control.

2、When selected a certain or several units by Single Control or Group Control, Timer setting and On/off setting can be set. Timer setting can set 4 on/off times in a day in one week; and on/off setting can be done by pressing on/off button.

3、 Connection between WEEKLY TIMER and manual control is shown as following:



P	S	P	S	P	S	P	S
0000	1	0010	5	0001	9	0011	13
1000	2	1010	6	1001	10	1011	14
0100	3	0110	7	0101	11	0111	15
1100	4	1110	8	1101	12	1111	16

Fig.2

Wire controller (with week timer functions)

WARNING!

- Never install the wired controller where there is water leakage.

- Never knock, throw or frequently open the wired controller.

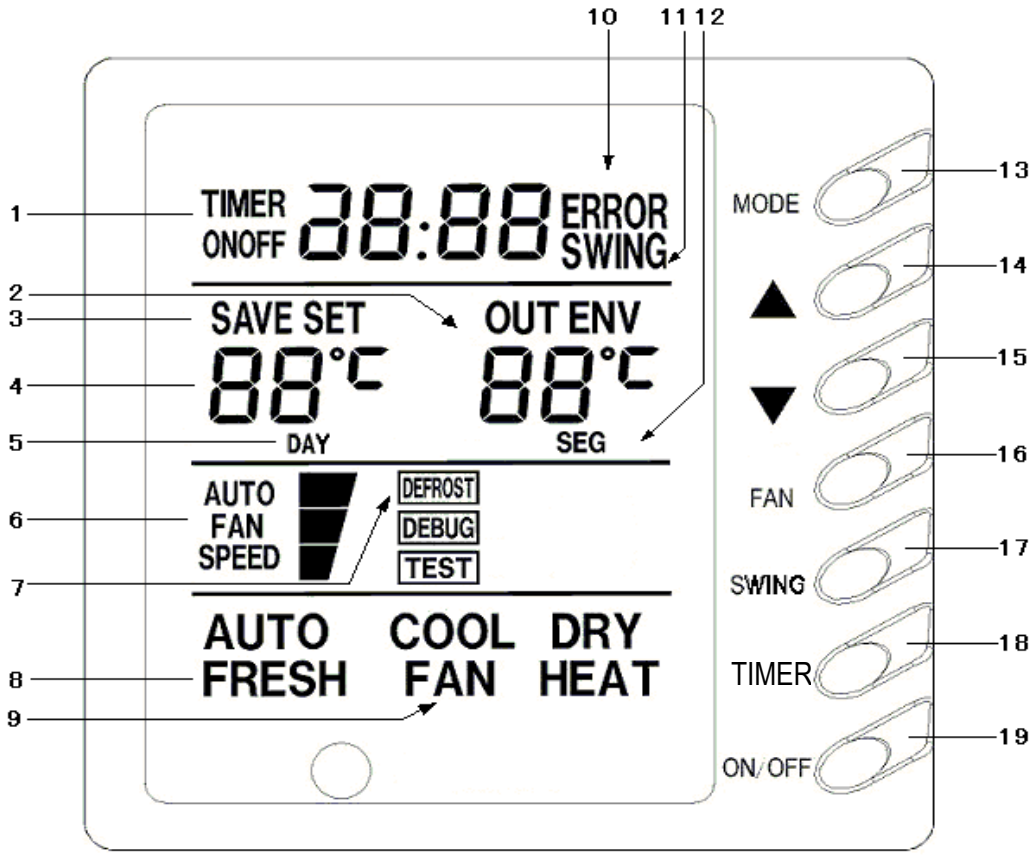


Fig.3

Each part of wired controller			
1	Timing Display	11	Swing Status Display
2	Ambient Temperature Display	12	Timer interval Display
3	Energy Saving Status Display	13	Mode Button
4	Set Temperature Display	14	Set Temperature Increase Button
5	Week Display	15	Set Temperature Decrease Button
6	Fan Speed Display (Auto, High Speed, Medium Speed, Low Speed)	16	Fan Speed Button
7	Defrosting Status Display	17	Swing Button
8	Fresh Air Status Display	18	Timing Button
9	Mode (Cooling, Dehumidifying, Fan, Heating, Auto)	19	ON/OFF Button
10	Malfunction Display		

1） ON/OFF（Fig.4）

- ❖ Press the "**ON/OFF**" button, the unit will start running.
- ❖ Press the "**ON/OFF**" button again, the unit will stop running.

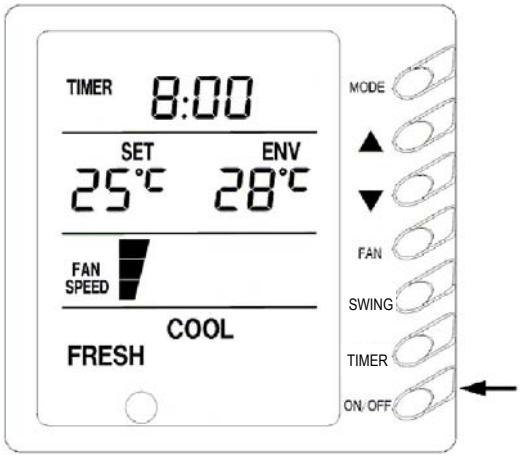


Fig.4

2）**Fan Control** (Fig.5 is about display region and the same as following figures.)

When press FAN button once, the fan speed will be changed as follow:

LOW → MID → HIGH → AUTO

- ❖ In DRY mode: the fan speed will be set at low automatically.

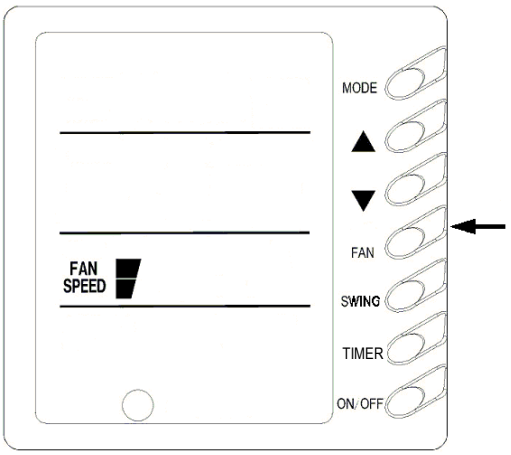


Fig.5

3）Temperature Setting (Fig.6)

- ❖ Press the setting temperature button:

▲：For temperature increase

▼：For temperature decrease

（Press this button once, the temperature will be increased or decreased by 1℃.）

Note: Press ▲+ ▼button for 5 seconds, "EE" will appear where SET TEMP is displayed and all buttons are shielded. Press ▲+▼button again for 5 seconds to cancel locked function.

If long-distance monitoring controller or central controller shield displayer, all buttons and signals from remote controller will be shielded too, and CC will be displayed where SET TEMP is displayed.

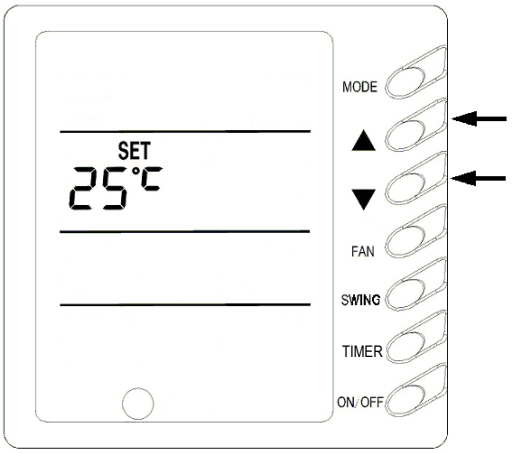


Fig.6

Setting temperature range under each mode:

HEAT --------- 16℃～30℃

COOL --------- 16℃～30℃

DRY --------- 16℃～30℃

FAN --------- can not be set

Auto mode is divides into new auto mode and old auto mode.

NEW AUTO MODE ----------16℃～30℃

OLD AUTO MODE ---------- can not be set

4）Swing Setting (Fig.7)

- Press SWING button, SWING will be displayed on the LCD, in which case, the unit is under swing status.
- Press this button again, the words will disappear and the unit stops swinging.

Note: Sleep function can be set by remote controller.

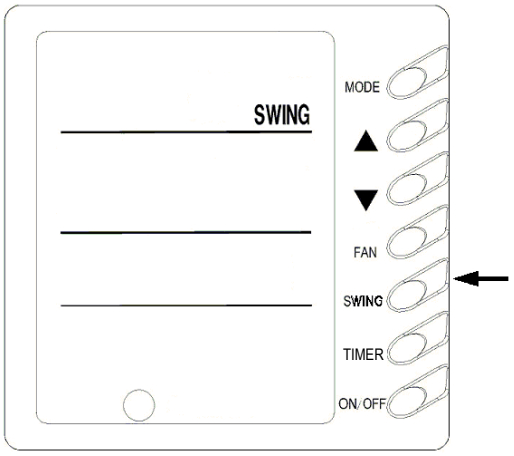


Fig.7

5）Running Mode Setting (Fig.8)

- Every press of mode button, the operation mode will change as follow:

→COOL→DRY→FAN→ HEAT → AUTO

- In cool mode, COOL will light, in which case, setting temperature should be set to be lower than present ambient temperature; If not, the unit will not operate in cool mode and only the fan is active.
- In dry mode, DRY will light .Indoor fan will run at low speed in certain temp. range. Dry efficiency as well as energy saving efficiency in this mode is much better than that in cool mode
- In heat mode, HEAT will light. The setting temperature should be set to be higher than present ambient temperature; if not, the unit can not operate in heat mode.
- In fan mode, FAN will light.
- In auto mode, AUTO will light and the unit will run at the mode automatically adjusted according to ambient temp.
- In heating mode, if outdoor temp is low with high humidity,

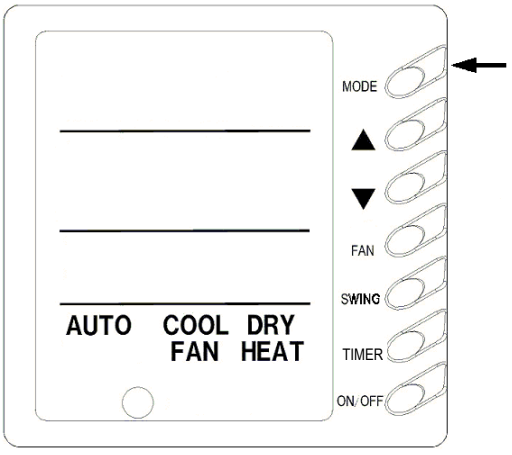


Fig. 8

the outdoor unit will be frosted resulting in low efficiency of heating, in which case, the controller will automatically start to defrost with DEFROST displayed.

Note: No heating for cooling-only unit and auto mode will be shielded after setting energy saving.

6）Timer Setting (Fig.9, 10, 11)

Timer function in this wired controller conneted with weekly timer is invalid and wired controller will be controlled by weekly timer.

Either in ON status or OFF status of the unit press TIMER button into timing setting, and then press▲ or ▼button to set timing(Fig.7),set time(Fig.8) and delete timing (Fig.9). At last, press TIMER to set it.

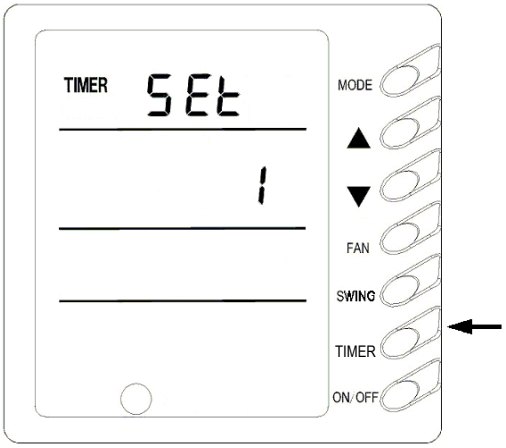


Fig.9

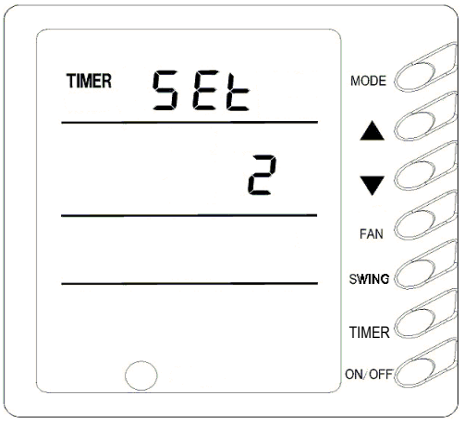


Fig.10

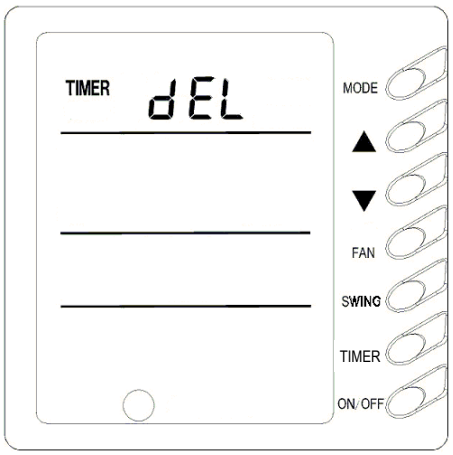


Fig.11

❖ In timing setting mode, press MODE button to select any desired setting object: Week (1-7), timer interval (1-4), timing (Timer on or Timer off time), min. part or hour part of time, and then press▲ or ▼ button to adjust this object, which is fixed by pressing TIMER button or can be canceled by pressing Timer again. During fixing setting there must be blinking characters. During canceling setting, if there are also blinking characters, setting can be continuous till quit It by pressing ON/OFF button; meanwhile, timing data are memorized. (Fig.12, 13)

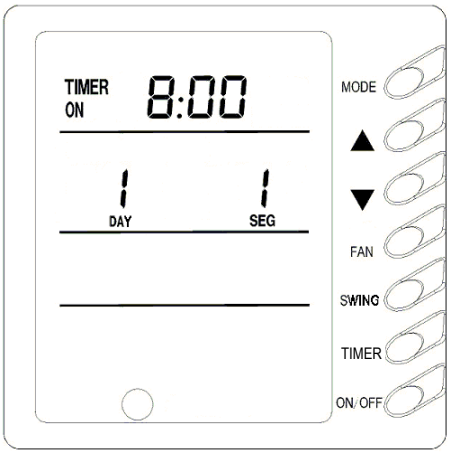


Fig.12

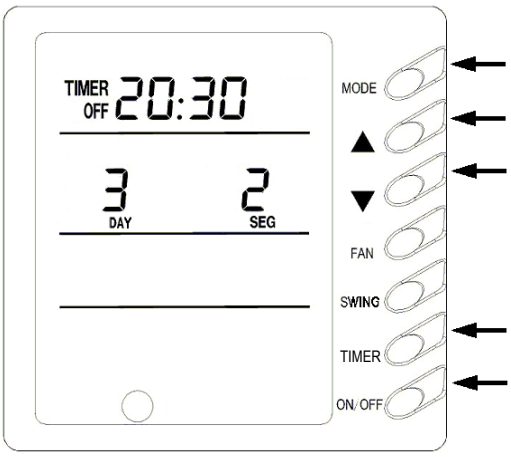


Fig.13

❖ In time setting mode press MODE button to select any desired setting object: Week (1-7), min. part (0-59) or hour part (0-23), and then press▲ or ▼ button to adjust this object, which is fixed by pressing TIMER button or can be canceled by pressing Timer again. During fixing setting there must be blinking characters. During canceling setting, if there are also blinking characters, setting can be continuous till quit It by pressing ON/OFF button.(Fig.14)

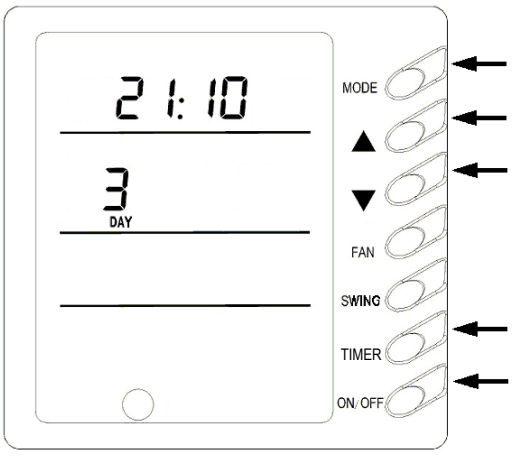


Fig.14

❖ In deleting timing status, press ▲ or ▼ button to select one day of a week, and then press TIMER button to confirm ,in which case, ”dd” is displayed .The day also can be canceled by pressing TIMER button without “dd” displayed. At last, press ON/OFF button to quit the setting after finish.(Fig.15)

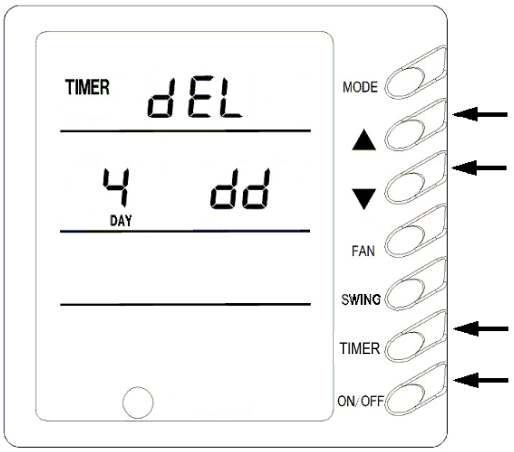


Fig.15

7）Outdoor Ambient Temp Display (Fig.16)

In normal condition, only indoor ambient temp is displayed where “ENVIROMENT” is displayed. At on or off status of the unit, if press SWING button for 5 seconds, outdoor ambient temp (OUT ENV) will be displayed.

① If outdoor temp is tested to be above zero, there will be no display where setting temp is displayed and outdoor ambient temp tested by inner system will be displayed where ambient temp is displayed.

② If outdoor temp is tested to be below zero, “—” will be displayed where set temp is displayed and absolute value of outdoor ambient temp tested by inner system will be displayed where ambient temp is displayed.

After 10- second display, the system will return to display interface of indoor ambient temp.

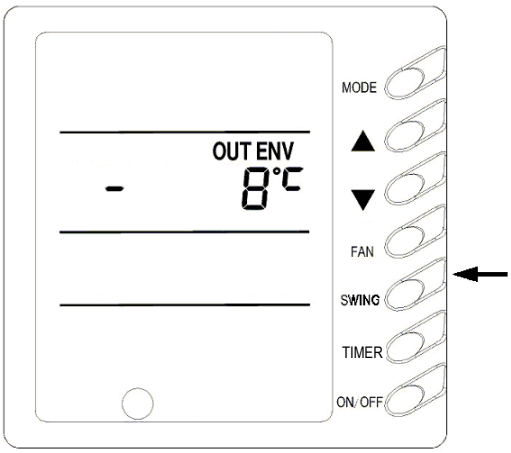


Fig.16

Note: This unit function is invalid without connecting with outdoor ambient temp sensor.

8）Energy Saving Setting (Fig.17)

Press FAN+▼ for 5 seconds into energy saving menu, in which case, SAVE and COOL is displayed (If it’s the first time for setting, initial value 26℃ will be displayed.) ,lower- limit temp is displayed where

set temp is displayed and set temp during setting is displayed and blinking. Press▲ and ▼ to set lower-limit cooling temp (setting range is16－30) and then press ON/OFF to fix .Press ▲ and ▼ to set upper-limit cooling temp, which will be displayed where ambient temp is displayed (setting range is 16-30), and then press ON/OFF to fix.

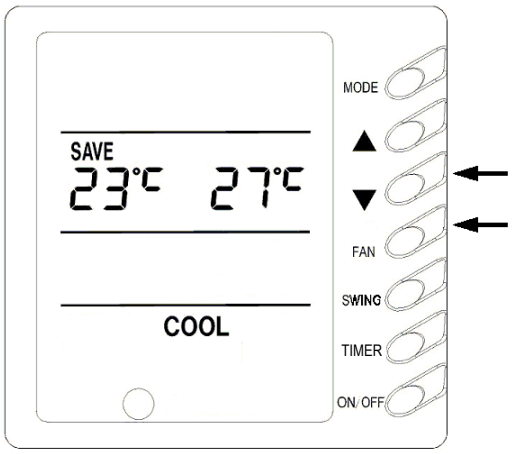


Fig.17

Note: Upper- limit temp can not be set to be lower than lower-limit temp, or else the higher temp will be defaulted to be upper limit and the lower one to be lower- limit. Press MODE button to set energy saving in cooling or dry mode and then switch to energy saving setting in heating mode, in which case, SAVE and HEAT will be displayed, which is quitted by pressing FAN and ▼ for 5 seconds. If there is no operation after the energy saving interface appears in 20s when the system responds last press of one button, the system will trip off the menu and display normal interface of unit off.

SAVE will be displayed in LCD at next startup of the unit if above setting has been finished. Either by pressing buttons of the displayer or remote controller, the setting temp can never be set to be higher than temp range set under energy saving mode before. For example, lower-limit cooling temp under energy saving mode is 23℃ and upper limit is 28℃,so the user can only set cooling temperature in the range of 23-28℃.

If the same limit temperature is set, the unit will only run under corresponding mode at this setting temp.

Press Fan+▼ simultaneously for 5s to quit this function if it has been effective, but former setting value can not be cleared, which will be as the original value of next setting.

If the power is off, energy saving setting will be memorized, which continues effectively after the power is on next time.

If energy-saving mode and sleeping mode is setting, auto mode will be shielded.

9) Power–off Memory Setting (Fig.18)

Press mode button continuously for 10s and select if

memorize startup and stop status of the unit or not at unit.01 displayed in the region of displaying setting temp indicates memorizing start and stop status of the unit after power off .02, quit by pressing ON/OFF button ,indicates not memorizing. If after the interface of memorizing startup and stop status of the unit appears, there is no operation in 20s when the system responds the last press of one button, the system will trip off the menu and display normal stop interface, but it also memorizes present information.

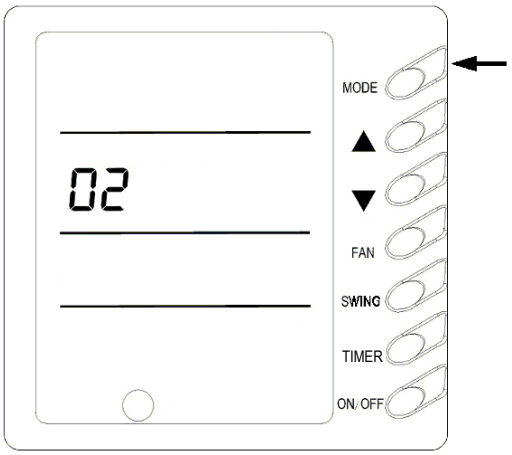


Fig.18

10）Malfunction Display (Fig.19)

If malfunction happens during operating of the unit, ERROR will blink with error code displayed. For example, the right figure indicates compressor low-pressure protection.

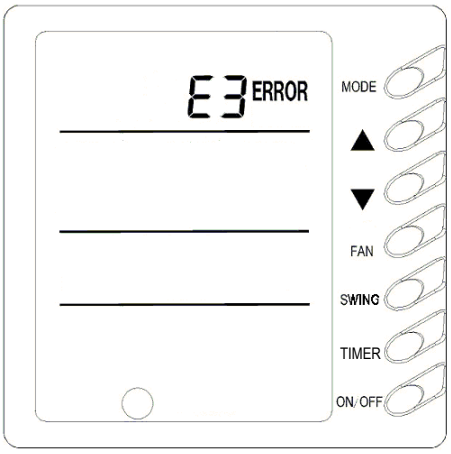


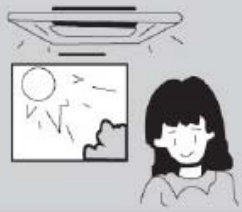
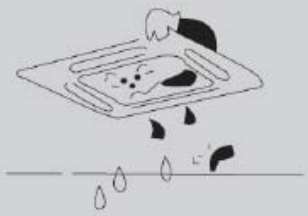
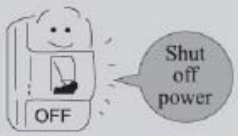
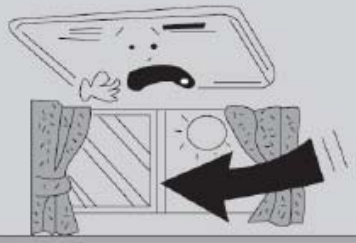
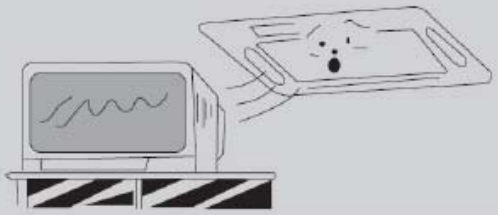
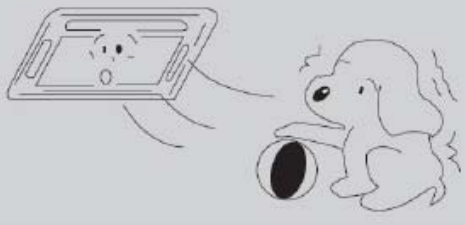
Fig.19

Codes	Malfunction
E0	Water pump malfunction
E1	Compressor high-pressure protection
E2	Indoor anti-freezing protection
E3	Compressor low-pressure protection
E4	Compressor high-temp. exhaust protection
E5	Compressor overload protection
E6	Communication malfunction
E8	Indoor fan protection
E9	Water-full protection
F0	Air inlet indoor ambient temp. sensor malfunction
F1	Evaporator temp. sensor malfunction
F2	Condenser temp. sensor malfunction
F3	Outdoor ambient temp. sensor malfunction
F4	Exhaust ambient temp. sensor malfunction
F5	Ambient temp. sensor malfunction in displayer
EH	Auxiliary electric heat malfunction

Note!

If EH malfunction happens, please power the unit off immediately and ask professionals for help。

6、Optimum operation

Adjust the room temperature properly	
Adjust the room temperature properly for a comfortable environment.	
Never place anything under the indoor unit that is to be kept dry.	
Water may drop from the indoor unit when the humidity is over 80% or when the drainage outlet is clogged.	
Turn off the main power supply switch when it is not to be used for long periods of time	
When the main power switch is truned on,some watts of electricity is being used even if the system is not operating. Turn off the main power supply switch to save energy.	
Do not open the doors and windows for a long time when air conditioner is operating	
Cooling and heating performance will be affected if the doors and windows are open for a long time.	
Place TV , radio, stereo, etc. at least 1m away from the indoor unit and the remote controller	
It may cause interference in the picture or sound.	
Avoid direct air flow to pets and plants.	
It may do harm to them.	

7、Trouble shooting

★ Warning

- In case of something abnormal (such as bad smell), shut of fthe power switch immediately and contact service cent.er
- Do not repare the air conditioner by yourself because wrong repair may cause fire,please contact service center to do it for you.

★Check item shown below before contacting service center.

Symptom	Cause	Corrective Measures
The system does not operate at all	Power off	It will restart when power is on
	Pause off or fuse broken	Change fause or replace fuse (Done by professinal)
	Batteries of remote controller fall	Replace batteries
	Out of the remote controlling range	Keep distance in 8m or less
The system stops right after it is started	Object at the air intake and air outlet of the air conditioner	Romove them
Cooling and heating is malfunctioning	Object at the air intake and air outlet of indoor and out door units	Romove them
	Wrong temperature setting	Refer to p6
	Low fan speed	Refer to p6
	Air direction is not correct	Refer to p6
	Doors or windows are open	Close them
	Direct sunshine	Close the curtain or blinder
	Too many people in the room	
	Too many heating sources	
	Dirty air fliter	Clean it ,done by professinal

★Note:

If trouble still exists after checking the above items,please contact service center.

★ The following are not troubles

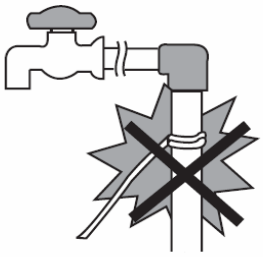
	" Trouble"	Cause
The unit does not operate when	Restart right after stopping	Once the unit is stopped, it will not operate for about 3 minutes to protect it
	Press SET TEMP.and then release immediately.	
	Power is switched on	Wait for 1 minute
Mist is emitted	When cooling	Room air is chilled rapidly and becomes foggy.
Outdoor unit is hot	after the unit is stopped	Compressor is emitting heat to get ready for restarting.
Noise	Buzz is heard at starting	It's the starting sound of thermostat and will turn low after 1 minute.
	Sound of running water can be heard during operation	This is caused by the refrigerant flowing inside the unit
	A "shuh" sound which is heard at the start or immediately after the stop of operation or which is heard at the start or immediately after the stop of defrosting operation. A continuous low "shah" sound is heard when the system is in cooling operation or at a stop.	This is the noise of refrigerant caused by flow stop and flow change. The noise is heard when the drainage pump is in operation.
	Cracking noise can be heard during or after operation.	This is caused by the panel expanding or contracting due to the change in temperature.
Dust from the units	Starting operation after not using for a long time.	Dust absorbed by the unit blows out
Wind from the outlet smells	During operation	This is caused by the odors in the room which have gotten onto the air conditioner

8、Installation notes(This should be done by professional)

Location	Noise
• The air conditioner must be firmly installed and 3～4 liability checks must be done every year. • Avoid place whthin easy reach of young children. • Avoid other heat sources or dircect sun light. • Install indoor unit away from TV set or radio. • Avoid where inflammable gas is likely to leak. • At salty coastal areas or special areas such as the vicinity of a sulphurous hot spring,please contact dealer before installation to make sure it is safe to use the unit. • Not to be installed in laundries.	• Select a place with good ventilation or it may affect performance or increase noise. • Install the air conditioner on a foundation that can withstand its weight.insufficient strength may result in the fall of equipment and cause injury. • Select a place so as not to annoy neighbor with the hot air or noise. • Never place objects near the air outlet or the unit,it may affect performance or increase noise. • If there is abnormal noise during the operating,contact dealer immediately.
Installation and transportation	**Wiring arrangement**
• Installation and transportation of the unit must be done by skilled personnel. • Be sure to use only the specified accessories and parts for installation,failure to use may lead to electric shock, leakage or fire. • Carry out installation with consideration of strong winds, typhoons,or earthquakes.Improper installation work may result in accidents due to fall of equipment. • If the unit is to be moved to other place,please consult dealer first.	• Make sure wiring is carried out by qualified personnel according to laws and regulations and this manual,using a separate circuit and suitable fuse. • Be sure to install an earth leakage breaker. • Diameter of power supply cord must be big enough. (Refer to P24 about the sizes of diameter) • If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similary qualified person in order to avoid a hazard. • The appliance shall be installed in accordance with relative wiring regulations.
Earth	Be sure to connect the earth wire to earth device of the building.Install an earth leakage breaker. Do not connect the earth wire to gas or water pipes,lightning condutor or telephone earth wire.

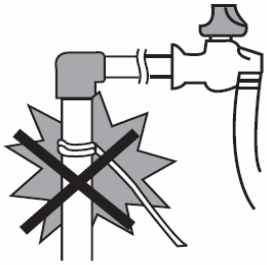
Water pipe

Some parts of the water pipe are made of plastic materials and not suitable for earthing.



Gas pipe

If there is electrical leakage accidently from air conditioner,it is easy to cause fire or explosion.



9、Care and maintenance

Please cut off the power supply after you used the air conditioner.

Warning

- Cut off power supply before cleaning
- Do not splash water directly to the unit

- Absorbs bad smell in air such as carbon monoxide carbon dioxide,benzol, gasoline and so on.
- Absorbs harmful objects bigger than 1.0 um in air such as dust,flower power, germ, virus and so on.
- It can be used for about half a year to one year.

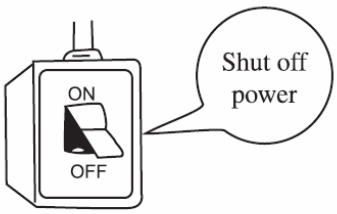
Before starting the air conditioner for the first time in the season

1. Check to make sure no objects obstructing the intake and outlets parts on both the indoor and outdoor units.
2. Check to make sure ground wire is connected and that it is not damaged.
3. Check to make sure air filter has been cleaned.
4. Turn on the power 6 hours before starting the air conditioner.

(2 and 3 should be done by professional)

End of season cleaning

1. Turn off power.
2. Clean the filter and the body of the unit.
   (Done by professinal)
3. Clear outdoor unit of dust.
4. If there is any rust in the outdoor unit, this should be painted over to prevent the rust from spreading.



10. Instructions of unit installation

10.1 Install of the cassette type indoor unit

A、Schematic diagram of installation spaces

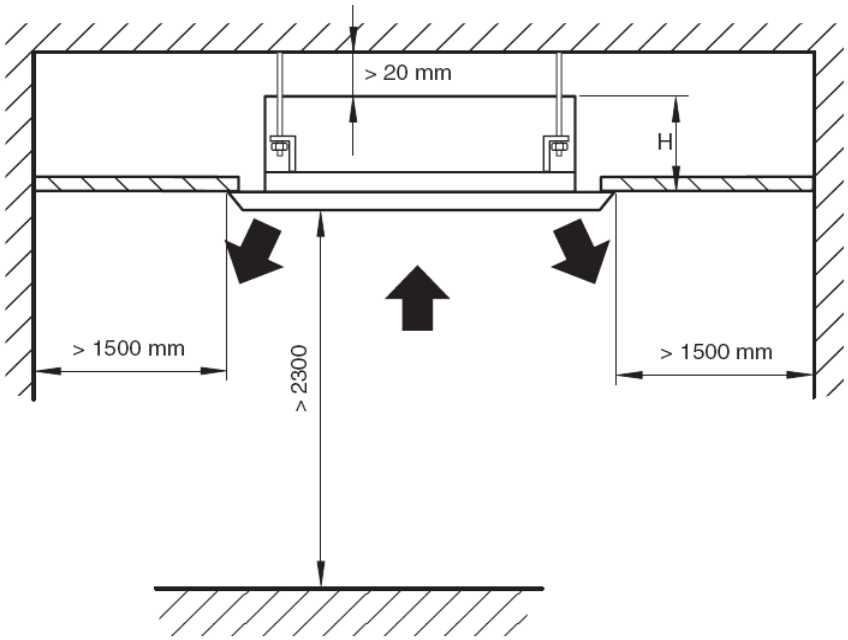


Fig.1

Models	H(mm)
ICI 12 ICI 18	230
ICI 24	260
ICI 36 ICI 45 ICI 50	320

B、Select install location of the indoor unit

1. Obstruct should put away from the intake or outlet vent of the indoor unit so that the airflow can be blown though all the room.
2. Make sure that the installation had accord with the requirement of the schematic diagram of installation spaces.
3. Select the place where can stand 4 times of the weight of the indoor unit and would not increase the operating noise and oscillate.
4. The horizontally of the installation place should be guaranteed.
5. Select the place where is easy to drain out the condensate water, and connect with outdoor unit.

6. Make sure that there are enough space for care and maintenance. Make sure that the weight between the indoor unit and ground is above 2300mm.
7. When installing the steeve bolt, check if the install place can stand the weight 4 times of the unit's. If not, reinforce before installation. (Refer to the install cardboard and find where should be reinforced) The appliance shall not be installed in laundry.

Note!

There will be lots of lampblack and dust stick on the acentric, heat exchanger and water pump in dining room and kitchen, which would reduce the capacity of heat exchanger, lead water leakage and abnormal operation of the water pump.

The following treatment should be taken under this circumstance:

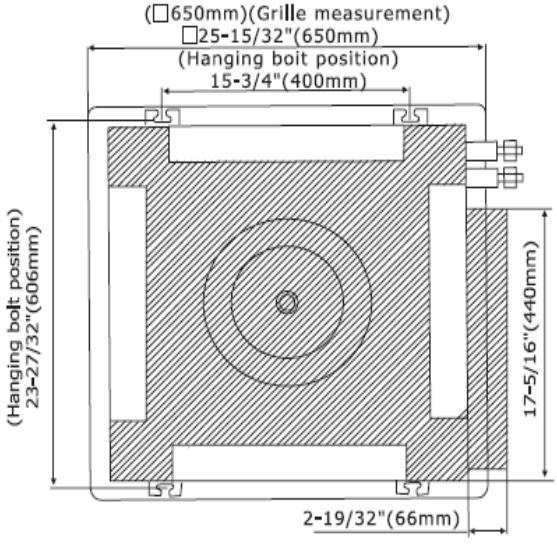
1. Ensure that the smoke trap above cooker has enough capacity to obviate lampblack to prevent the indraft of the lampblack by the air conditioner.
2. Keep the air conditioner far from the kitchen so that the lampblack would not be indraft by the air conditioner.

C、Important notice

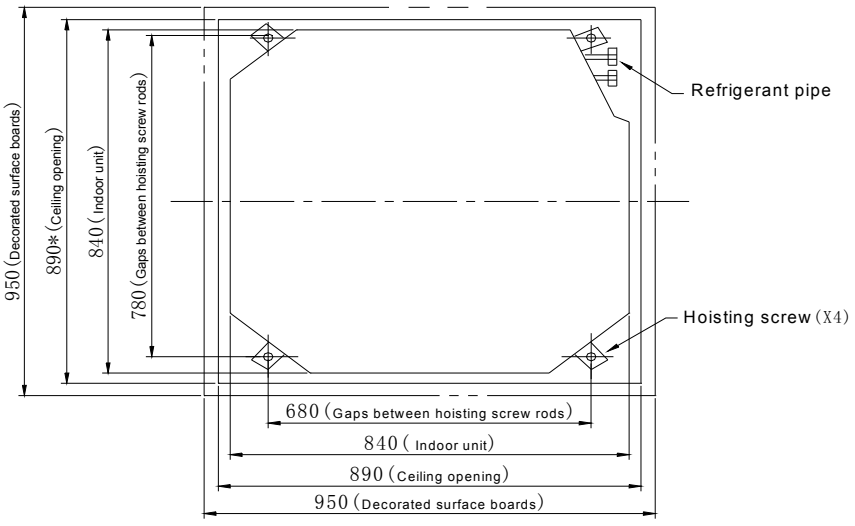
☆ To guarantee the good performance, the unit must be installed by professional personnel according with this instruction.

☆ Please contact the local agent special nominated repair department before installation. Any malfunction caused by the unit that is installed by the department that is not special nominated by local agent would not deal with on time by the inconvenience of the business contact.

D、Dimension of ceiling opening and location of the hoisting screw (M10)



ICI 12 ICI 18



ICI 24 ICI 36 ICI 45 ICI 50

☆ The drilling of holes in the ceiling must be done by the professional personnel.

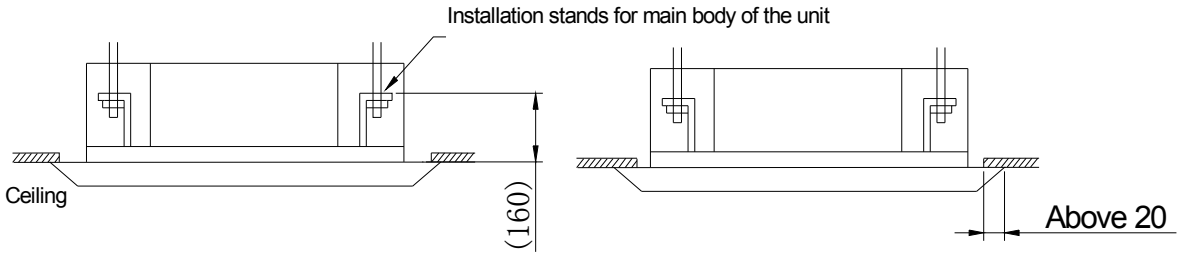


Fig 1

Notes: The dimension for the ceiling openings with * marks can be as large as 910mm. But the overlapping sections of the ceiling and the decorated surface boards should be maintained at no less than 20mm.

E、Main body of hoisting air conditioner

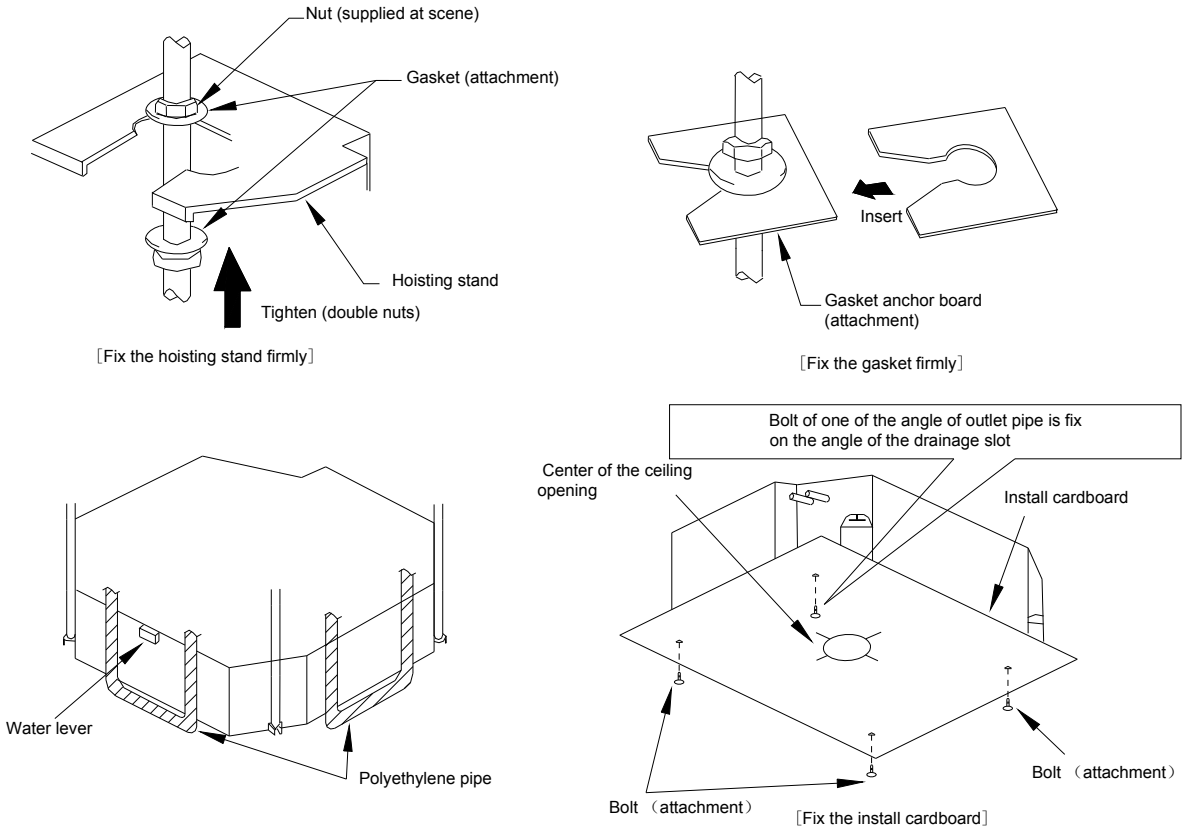


Fig.2

1、The primary step for install the indoor unit.

☆ When attach the hoisting stand on hoisting screw, do use nut and gasket individually at the upper and lower of the hoisting stand to fix it. The use of gasket anchor board can prevent gasket break off.

2、Use install cardboard

☆ Please refer to the install cardboard about the dimension of ceiling opening.

☆ The central mark of the ceiling opening is marked on the install cardboard.

☆ Install the install cardboard on the unit by bolt (3 piece), and fix the angle of the drainage pipe at the outlet vent by bolt.

3、Adjust the unit to the suitable install place.

4、Check if the unit is horizontal.

☆ Inner drainage pump and bobber switch are included in the indoor unit, check if 4 angle of every unit are horizontal by water lever. (If the unit is slant toward the opposite of the coagulate water flow, there may be malfunction of the bobber switch and lead water drop.)

5、Backout the gasket anchor board used to prevent gasket break off and tighten the nut on it.

6、Backout the install cardboard.

Note!

● **Please do tighten the nuts and bolts to prevent air conditioner break off**.

F、Connect the refrigerant pipe

☆ **Selection of Connecting Pipe**

Item / Model	Size of Fitting Pipe (Inch)		Max. Pipe Length (m)	Max. Height Difference between Indoor Unit and Outdoor Unit (m)	Amount of Additional Refrigerant to Be Filled(For Extra Length of Pipe)
	Gas Pipe	Liquid Pipe			
ULS 12 ULS 18	1/2	1/4	20	15	30g/m
ULS 24	5/8	3/8	30	15	60g/m
ULS 36 ULT 36 ULT 45 ULT 50	3/4	1/2	50	30	120g/m

Note: 1、The standard pipe length is 5m,When the length(L) of the connecting pipe is less than or equals 5m,there is no need to add refrigerant. If the connecting pipe is longer than 5m,it is required to add refrigerant,in the above table,the amounts of refrigerant to be added for the models are listed for each additional meter of pipe length.

2、The pipe wall thickness shall be 0.5-1.0mm and the pipe wall shall be able to withstand the pressure of 6.0MPa.

3、The longer the connecting pipe,the lower the cooling effect and the heating effect.

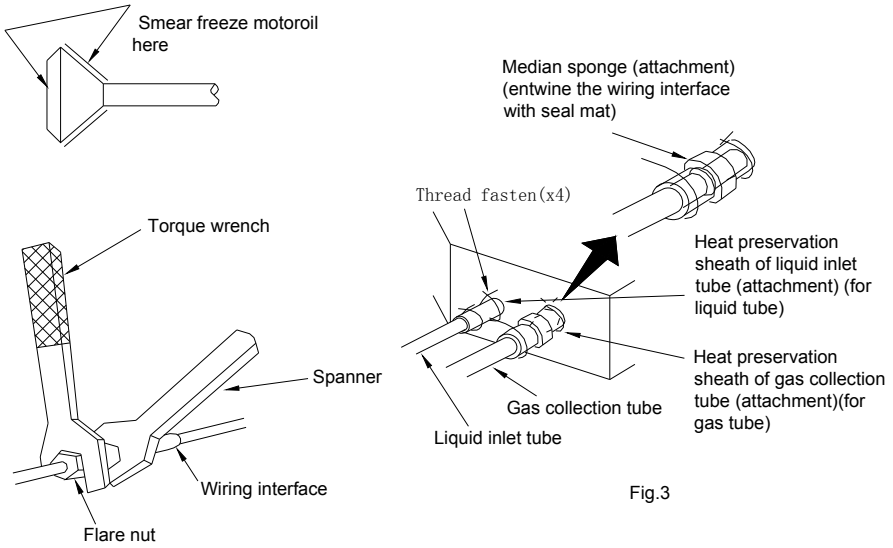

Smear freeze motoroil here
Torque wrench
Spanner
Wiring interface
Flare nut
Median sponge (attachment) (entwine the wiring interface with seal mat)
Thread fasten(x4)
Heat preservation sheath of liquid inlet tube (attachment) (for liquid tube)
Heat preservation sheath of gas collection tube (attachment)(for gas tube)
Gas collection tube
Liquid inlet tube

Fig.3

☆ When connect the pipe to the unit or backout it from the unit, please do use both spanner and torque wrench. as shown in fig.3.

☆ When connect, smear both inside and outside of the flare nut with freeze motor oil, screw it by hand and then tighten it with spanner.

☆ Refer to form 1 to check if the wrench had been tightened (too tight would mangle the nut and lead leakage).

Form 1: The tightening torque needed for tightening nut

Diameter（Inch）	Surface thickness（mm）	Tightening torque (N.m)
ϕ 1/4’’	≥0.5	15-30 (N • m)
ϕ 3/8’’	≥0.71	30-40 (N • m)
ϕ 1/2’’	≥1	45-50 (N • m)
ϕ 5/8’’	≥1	60-65 (N • m)
ϕ 3/4’’	≥1	70-75 (N • m)

☆ Examine the connection pipe to see if it had gas leakage, then take the treatment of heat insulation, as shown in the fig.3.

☆ Only use median sponge to entwine the wiring interface of the gas pipe and heat preservation sheath of the gas collection tube.

G、Drainage hose

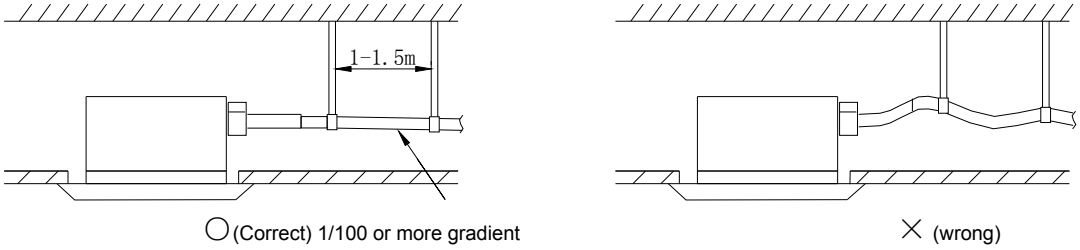
1. Install the drain hose

☆ The diameter of the drain hose should be equal or bigger than the connection pipe's. (The diameter of polythene pipe: Outer diameter 25mm Surface thickness ≥1.5mm)

☆ Drain hose should be short and drooping gradient should at less 1/100 to prevent the formation of air bubble.

☆ If drain hose cannot has enough drooping gradient, drain raising pipe should be added.

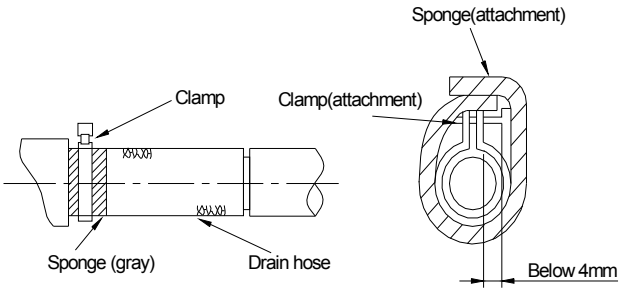
☆ To prevent bent of the drain hose, the distance between hoisting stand should is 1 to 1.5m.



☆ Use the drain hose and clamp attached. Insert the drain hose to the drain vent, and then tighten the clamp.

☆ Entwine the big sponge on the clamp of drain hose to insulate heat.

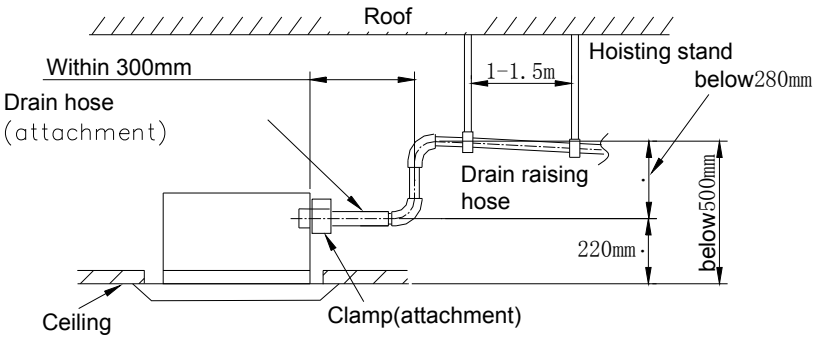
☆ Heat insulation should be done to indoor drain hose.



● Note of drain step up pipe

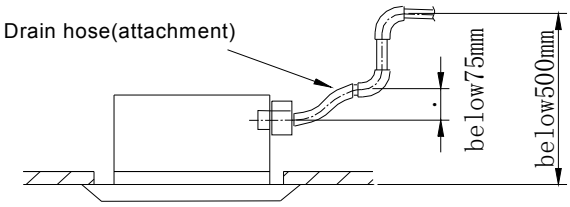
☆ The install height of the drain raising pipe should less than 280mm.

☆ The drain raising pipe should form a right angle with the unit, and distance to unit should not beyond 300mm.

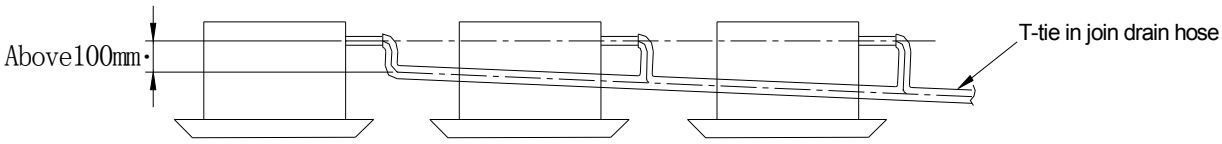


Instruction

☆ The slant gradient of the attached drain hose should be within 75mm so that the drain hole doesn't has to endure the unnecessary outside force.



☆ Please install the drain hose according to the following process if several drain hoses join together.



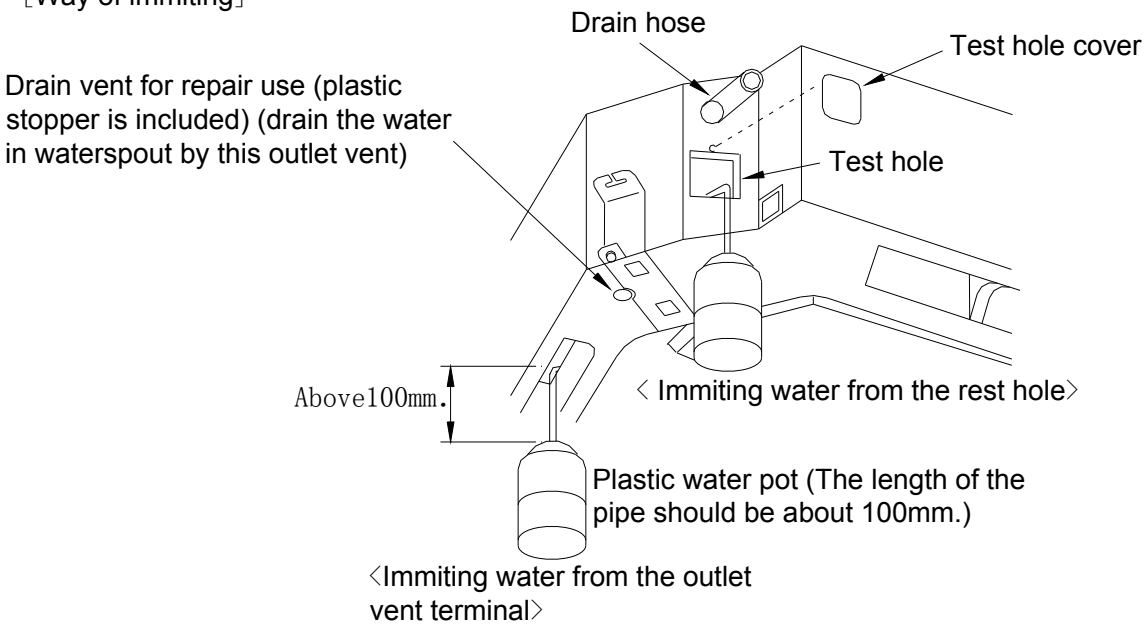
The specs of the selected join drain hose should fits the running capacity of the unit.

☆ Check the smoothness of drain after installation.

☆ Check the drain state by immitting 600cc water slowly from the outlet vent or test hole.

☆ Check the drain in the state of refrigerating after installation of the electric circuit.

［Way of immiting］


Drain hose
Test hole cover
Drain vent for repair use (plastic stopper is included) (drain the water in waterspout by this outlet vent)
Test hole
Above100mm.
〈 Immiting water from the rest hole〉
Plastic water pot (The length of the pipe should be about 100mm.)
〈Immiting water from the outlet vent terminal〉

● **Warning:** Before obtaining access to terminals, all supply circuits must be disconnected.

10. 2 Electric wiring

1、All field supplied parts and materials must conform to local laws and regulations.

2、For electric wiring, refer to WIRING DIAGRAM attached to the unit body.

3、All wiring must be performed by a skilled technician.

4、An all-pole disconnection switch having a contanct separation of at least 3mm in all poles should be connected in fix wiring.

5、Earth properly.

6、Wiring must conform to national laws and regulations.

7、The fixed wiring must be installed with a protector with no more that 30 mA leakage current.

8、If the supply cord is damaged, it must be replaced by the manufactory or its service agents or a similarty qualified person in order to avoid a hazard.

9、The temperature of refrigerant circuit will be high , please keep the inner connection cable away from the copper tube.

● **Wiring of unit and the controller**

1. Wiring of the indoor unit.

Remove the control box lid, pull the wires inside through rubber bush and wiring according to the WIRING DIAGRAM , then tighten it with clamp.

2. Wiring of the controller

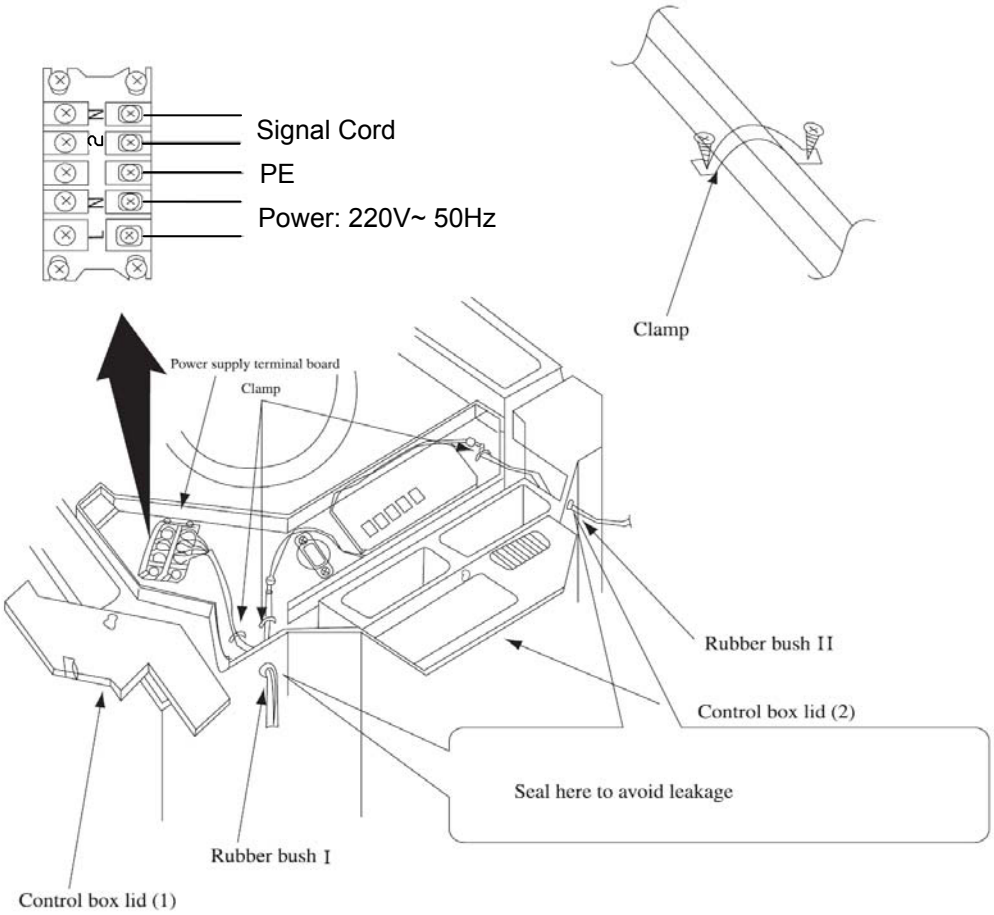
1) Remove the control box lid, pull wires inside through rubber bush and connect to the controller.

2) Wrap the wire with sealing pad.

3) After wiring, tighten it with clamp and fix the control box lid.

4) Connect the rubber wire (3-cords) to the power supply terminal board in properly.

5) Connect the singal wire (2-cords) to the signal terminal board properly.



● **Precautions: Be sure to connect the indoor unit and outdoor unit at right poles.**

10. 3 **Installation of panel**

● Set the panel to the indoor unit body by matching the position of the swing flap motor of the decoration panel to the piping position of the panel to the piping position of the indoor unit as shown in fig.4.

● .Install the decoration panel

1、Hang the latch,which is located on the opposite side of the swing flap motor on the panel, temporarily to the book of the indoor unit. (2 Positions)

2、Temporarily hang the remaining 2 latches to the hooks on the sides of the indoor unit.(be careful not to let the swing motor lead wire get caught in the sealing material.)

3、Screw all 4 hexagon head screws located right beneath the latches in approximately 15mm.(panel will rise)

4、Adjust the panel by turning it to the arrowed direction in Fig.4 so that the ceiling opening is completely covered.

5、Tighten the screws until the thickness of the sealing material between the panel and the indoor unit body is reduced to 5~8 mm.

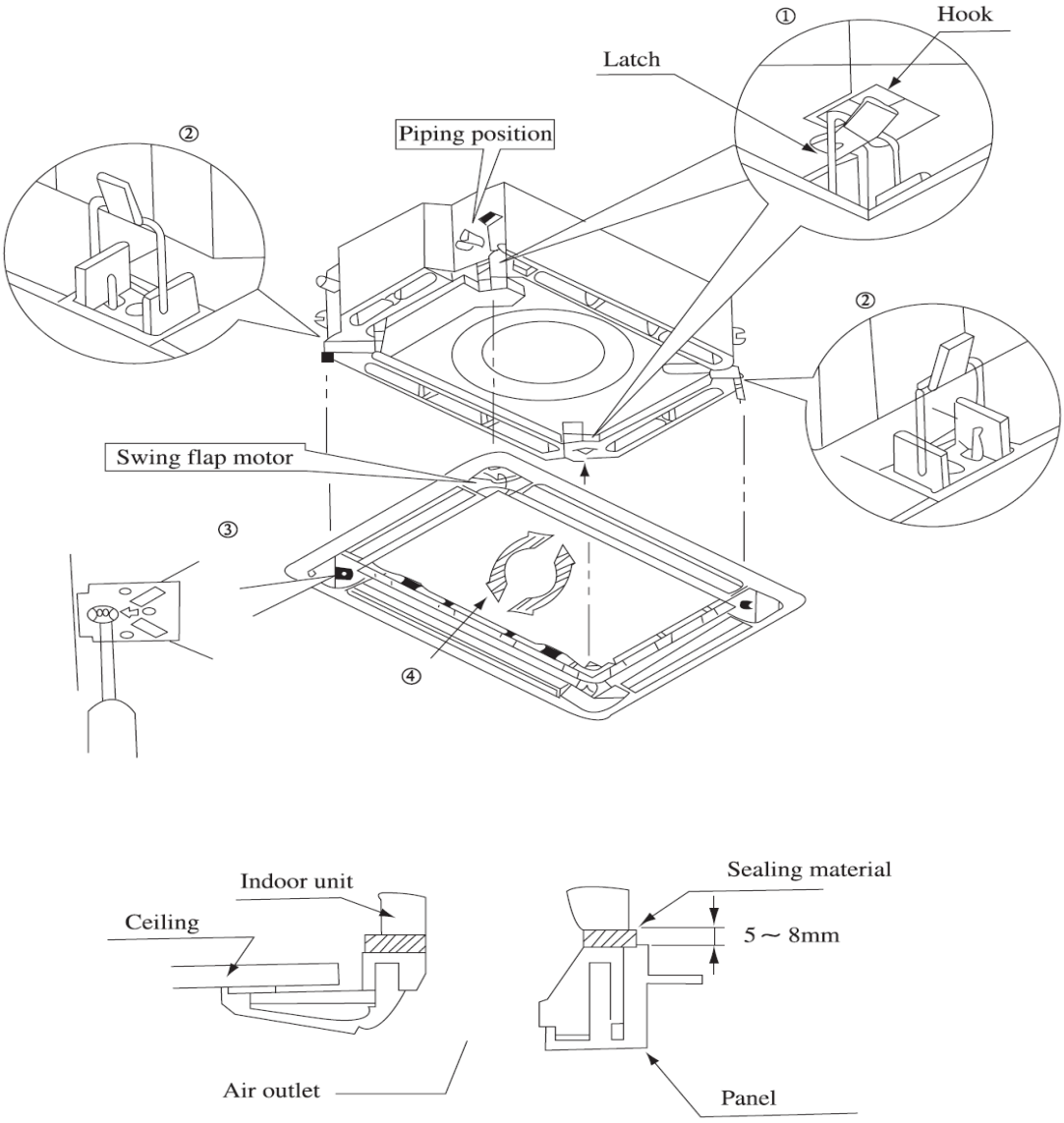


Fig 4

● Precautions

1. Improper screwing of the screws may cause the troubles shown in Fig.5

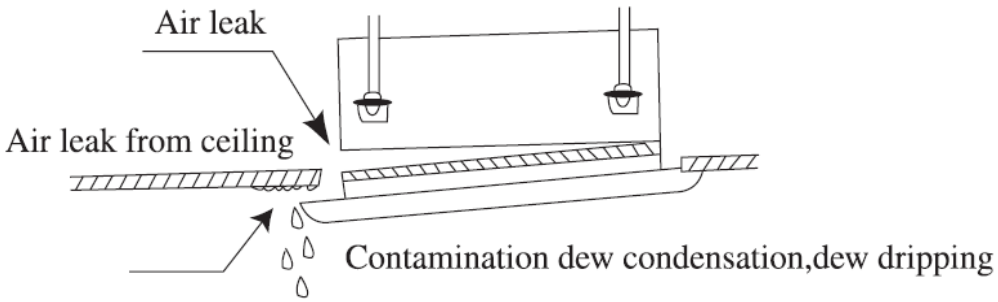


Fig.5

2. If gap is still left between the ceiling and the panel after screwing the screws, readjust the height of the indoor unit body (Refer to Fig.6)

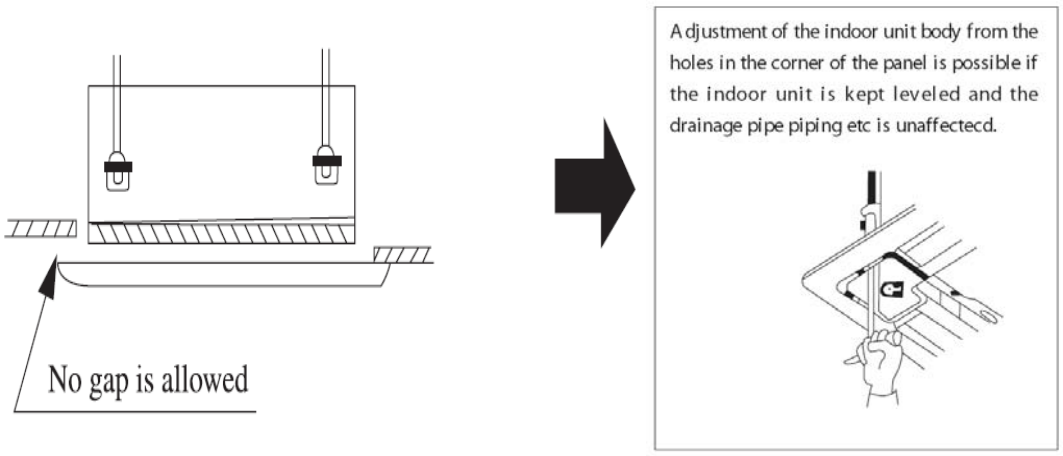
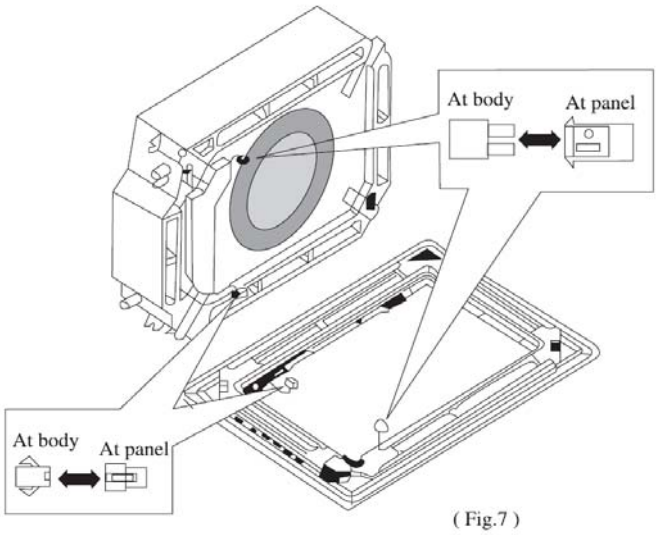

No gap is allowed
Adjustment of the indoor unit body from the holes in the corner of the panel is possible if the indoor unit is kept leveled and the drainage pipe piping etc is unaffectecd.

Fig.6

● After fixing be sure no gap left between the ceiling and the panel

3、Wiring of the decoration panel.

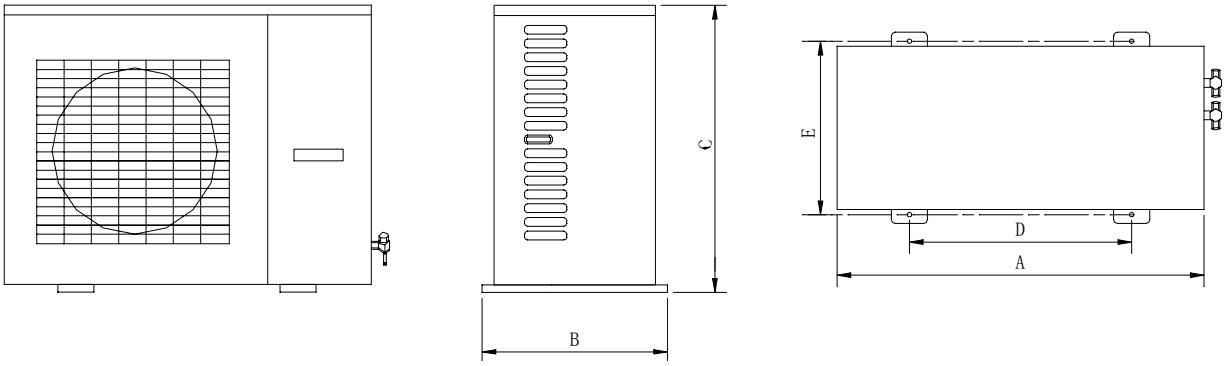
Connect the joints for swing flap motor lead wire (at 2 places) installed on the panel (Refer to Fig.7)



(Fig.7)

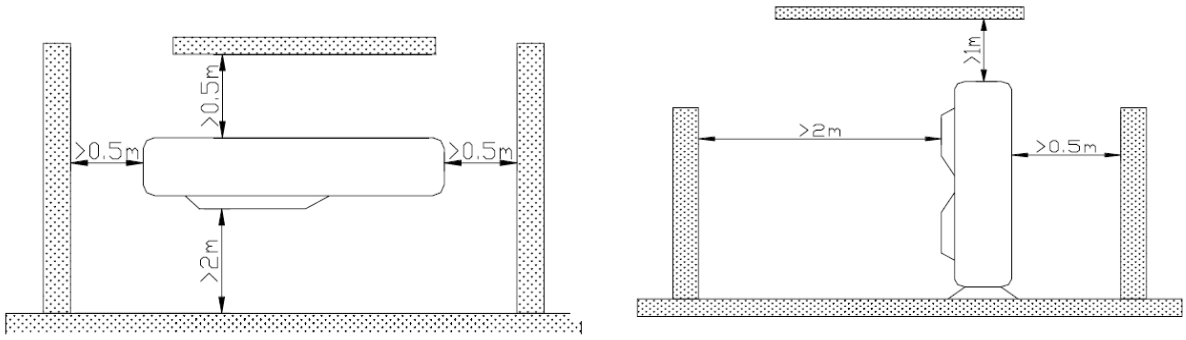
10.4 Install of outdoor unit

A、Profile Dimensions of Outdoor Unit



Model / Item	ULS 09 ULS 12 ULS 18	ULS 24	ULS 36 ULT 36	ULT 45 ULT 50 ULT 60
A	848	1018	1018	950
B	320	412	412	412
C	540	700	840	1250
D	540	572	572	572
E	286	300	378	378

B、Schematic diagram of installation spaces



C、Precautions on Installation of Outdoor Unit

To ensure the unit in proper function, selection of installation location must be in accordance with following principles:

(1) Outdoor unit shall be installed so that the air discharged by outdoor unit will not return and that sufficient space for repair shall be provided around the machine.

(2) The installation site must have good ventilation, so that the outdoor unit can take in and exhaust

enough air. Ensure that there is no obstacle for the air intake and exhaust of the outdoor unit. If there is any obstacle blocking the air intake or exhaust, remove it.

(3) Place of installation shall be strong enough to support the weight of outdoor unit, and it shall be able to insulate noise and prevent vibration. Ensure that the wind and noise from the unit will not affect your neighbors.

(4) Avoid direct sunshine over the unit. It is better to set up a sun shield as the protection.

(5) Place of installation must be able to drain the rainwater and defrosting water.

(6) Place of installation must ensure the machine will not be buried under snow or subject to the influence of rubbish or oil fog.

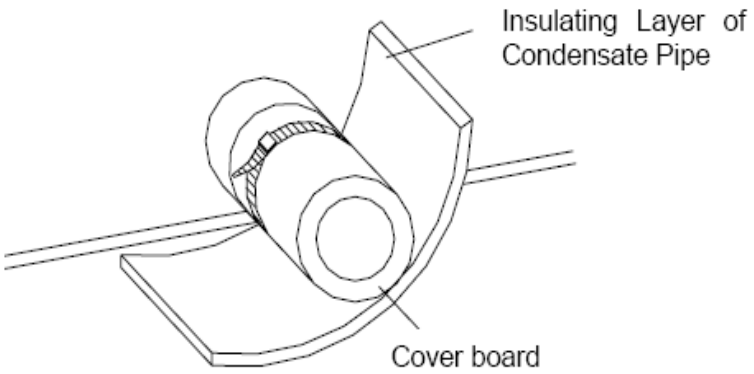
(7) The installation site must be at a place where the air exhaust outlet does not face strong wind.

D、Installation of Condensate Pipe

(1) The condensate pipe shall be installed with an inclining angel of 5～10°, so as to facilitate the drainage of condensate. The joints of the condensate pipe must be covered by thermal insulation materials to avoid generation of exterior condensate.

(2) A condensate outlet is located at both the left and right sides of the indoor unit. After selecting one condensate outlet, the other outlet shall be blocked by rubber plug. Bundle the blocked outlet with string to avoid leakage, and also use thermal insulation materials to wrap the blocked outlet.

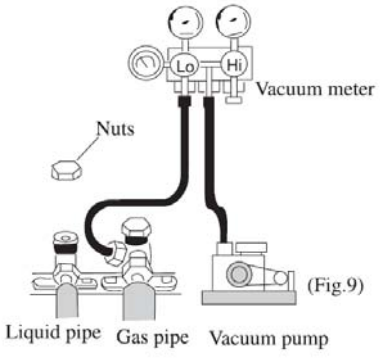
(3) When shipped out from factory, both the condensate outlets are blocked by rubber plugs.



Thermal Insulation of Condensate Pipe

E、Air purging and leakage test

1. Take out the nut cover of the inlet for refrigerant.
2. Connect the tube of the vacuum watch with



(Fig.9)

the vacuum pump, having the low-pressure end linking to the inlet for refrigerant.

3. Starting the vacuum pump, when the indicator turns to-1 bar, closing the low pressure handle and stopping vacuumize. keep for 15 minutes, ensuring the pressure of the vacuum watch remains.

4. Take out the valve cover of the gas valve together with the liquid valve.

5. Loosing the cord of liquid valve until the pressure rise to 0 bar.

6. Dismantle the tube from the cover of the inlet for refrigerant then, tighten the cover.

7. Loose the valve cord of the gas valve as well as the liquid valve entirely.

8. Tighten the valve cover of the gas valve and liquid valve so as to check whether leakage occurred.

F、Installation of Protective Layer of Connecting Pipe

1. To avoid generation of condensate on the connecting pipe and avoid leakage, the big pipe and the small pipe of the connecting pipe must be covered by thermal insulation materials, be bundled by adhesive tape, and be isolated from air.
2. The joint connecting to the indoor unit must be wrapped by thermal insulation material. There shall be no gap between the connecting pipe joint and the wall of the indoor unit. Refer to Figure 4.

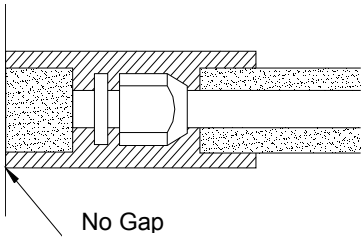


Fig.4

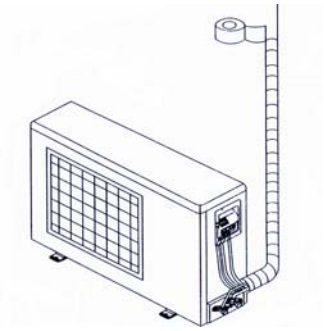


Fig.5

⚠ Caution:

After the pipes are wrapped by protective materials, never bend the pipes to form very small angle, and otherwise the pipes may crack or break.

3. Use adhesive tape to wrap the pipes:

(1) Use adhesive tape to bundle the connecting pipe and the cables together. To prevent condensate from overflowing out from the drainage pipe, separate the drainage pipe firm the connecting pipe and the cables.

(2) Use thermal insulation tape to wrap the pipes from the bottom of the outdoor unit until the upper end of the pipe where the pipe enters the wall. When wrapping thermal insulation tape, the later circle of tape must cover half of the front circle of tape (Refer to Figure 5).

(3) Wrapped pipe must be fixed to wall using pipe clamps.

⚠ Caution:

（1） Do not wrap the protective tape too tight, otherwise the efficiency of thermal insulation may be decreased. Ensure that the condensate drainage flexible tube is separate from the bundled pipes.

（2） After the protective work is completed and the pipes are wrapped, use seal material to block the hole in the wall, so as to prevent rain and wind from entering the room.

G、Position and Method of Installing Wire Controller

1、First select an installation position. According to the size of the communication line of the wire controller, leave a recess or a embedded wire hole to bury the communication line.

2、If the communication line between the wire controller (85 ×85 ×16) and the indoor unit is surface-mounted, use 1# PVC pipe and make matching recess in the wall (refer to Figure 6); If concealed installation is adopted, 1# PVC pipe can be used (Refer to Figure 7).

3、No matter if surface mounting or concealed mounting is selected, it is required to drill 2 holes (in the same level) which distance shall be the same as the distance (60mm) of installation holes in the bottom plate of the wire controller. Then insert a wood plug into each hole. Fix the bottom plate of the wire controller to the wall by using the two holes. Plug the communication line onto the control panel. Lastly install the panel of the wire controller.

⚠**Caution:**

1.During the installation of the bottom plate of the wire controller, pay attention to the direction of the bottom plate. The plate's side with two notches must be at the lower position, and otherwise the panel of the wire controller cannot be correctly installed.

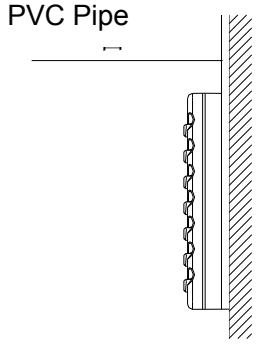


Fig 6 Surface Mounting of Cable

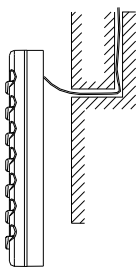


Fig 7 Concealed mounting of Cable

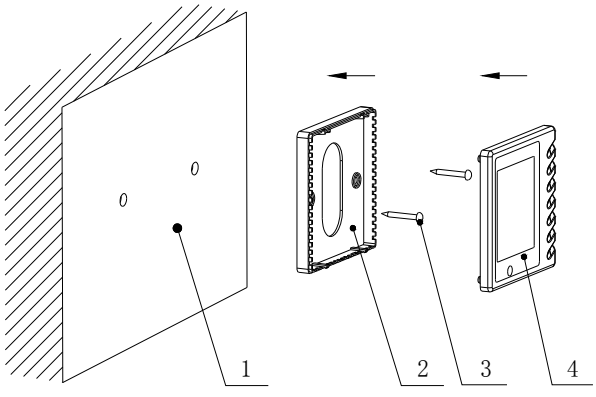


Fig 8 Schematic Diagram of Installation

No.	Name
1	Wall Surface
2	Bottom Plate of Wire Controller
3	Screw M4X10
4	Panel of Wire Controller

2. The communication distance between the main board and the wire controller can be as far as 20m (The standard distance is 8m).
3. The wire controller shall not be installed in a place where there is water drop or large amount of water vapor.

H. Connection of Signal Line of Wire Controller

1. Open the cover of the electric box of the indoor unit.
2. Pull the signal cable of the wire controller through the rubber ring.
3. Plug the signal line of the wire controller onto the 4-bit pin socket (J6) at the circuit board of the indoor unit.
4. Use cable fastener to bundle and fix the signal cable of the wire controller.

I. Power Cable Connection

⚠ **Caution: Before installing the electrical equipment, please pay attention to the following matters which have been specially pointed out by our designers:**

（1） Check that if the power supply used conforms to the rated power supply specified on the nameplate.

（2） The capacity of the power supply must be large enough.

（3） The lines must be installed by professional personnel.

An electricity leakage protection switch and an air switch with gap between electrode heads larger than 3 mm shall be installed in the fixed line.

1.Connection of single wire

（1） Use wire stripper to strip the insulation layer (25mm long) from the end of the single wire.

（2） Remove the screw at the terminal board of the air-conditioning unit.

（3） User pliers to bend the end of the single wire so that a loop matching the screw size is formed.

（4） Put the screw through the loop of the single wire and fix the loop at the terminal board.

2. Connection of multiple twisted wires

（1） Use wire stripper to strip the insulation layer (10mm long) from the end of the multiple twisted wires.

（2） Remove the screw at the terminal board of the air-conditioning unit.

（3） Use crimping pliers to connect a terminal (matching the size of the screw) at the end of the multiple twisted wires.

（4） Put the screw through the terminal of the multiple twisted wires and fix the terminal at the terminal board.

⚠ **Warning:**

If the power supply flexible line or the signal line of the equipment is damaged, only use special flexible line to replace it.

1、Before connecting lines, read the voltages of the relevant parts on the nameplate. Then carry out line connection according to the schematic diagram.

2、The air-conditioning unit shall have special power supply line which shall be equipped with electricity leakage switch and air switch, so as to deal with overload conditions.

3、The air-conditioning unit must have grounding to avoid hazard owing to insulation failure.

4、All fitting lines must use crimp terminals or single wire. If multiple twisted wires are connected to terminal board, arc may arise.

5、All line connections must conform to the schematic diagram of lines. Wrong connection may cause abnormal operation or damage of the air-conditioning unit.

6、Do not let any cable contact the refrigerant pipe, the compressor and moving parts such as fan.

7、Do not change the internal line connections inside the air-conditioning unit. The manufacturer shall not be liable for any loss or abnormal operation arising from wrong line connections.

8、shall not be liable for any loss or abnormal operation arising from wrong line connections.

Connection Of the Power Cable

1. Air-conditioning unit with single-phase power supply

（1） Remove the front-side panel of the outdoor unit.

（2） Pass the cable though rubber ring.

（3） Connect the power supply cable to the “L, N” terminals and

the grounding screw.

（4） Use cable fastener to bundle and fix the cable.

2. Air-conditioning unit with 3-phase power supply

（1） Remove the front-side panel of the outdoor unit.

（2） Attach rubber ring to the cable-cross hole of the outdoor unit.

（3） Pass the cable though rubber ring.

（4） Connect the power cable to the terminal and earthing screws marked “L1, L2, L3 & N”.

（5） Use cable fastener to bundle and fix the cable.

⚠ Caution:

Take great care when carrying out the following connections, so as to avoid malfunction of the air-conditioning unit because of electromagnetic interference.

(1) The signal line of the wire controller must be separated from the power line and the connecting line between the indoor unit and the outdoor unit.

(2) In case the unit is installed in a place vulnerable by electromagnetic interference, it is better to use shielded cable or double-twisted cable as the signal line of the wire controller.

10.5 Products Electric Installation

! Caution

The unit should be reliably earthed, if it is improperly earthed that may cause electric shock or fire.

Wiring layout

☆ Installation should be conducted by National Wiring Regulation.

☆ The rated voltage and exclusive power supply must be adopted for the air conditioners.

☆ The power cable should be reliable and fixed, in order to avoid the wiring terminal be suffered from force. And do not drag the power cable forcibly.

☆ The wire diameter of power cable should be large enough, if power cable and connection wire be damaged, it should be replaced by the exclusive cable.

☆ All electric installation must be done by professional personnel according to local law, regulation and this manual.

☆ It should be reliably earthed, and it should be connected to the special earth device, the installation work should be operated by the professional.

☆ The creepage protect switch and air switch must be installed.

Air switch should have the thermal dropout and magnetic dropout function, in order to avoid the

short circuit and overload.

☆ The on spot connection should refer to the circuit diagram, which is stuck on the unit body.

The model selection recommend table for air switch and power cable

⚠ Warning:

The section area of cables selected by users must not be smaller than the specifications show diagram.The signal wire between indoor and outdoor unit shall be installed in the shielded bushing, and the unshielded twisted pair cable (UTP) shall be used,the cross sectional aera of the cables must be 0.75 mm^2.

Model	Power supply	Capacity of air switch (A)	Min.cross sectional area of ground line(mm^2)	Outdoor power supply cord (mm^2)	Indoor power supply cord (mm^2)
ULS 12 / ICI 12	220~240V N~	16	2.5	3×2.5 H07RN-F	3×1.5 H05VV-F
ULS 18 / ICI 18	220~240V N~	16	2.5	3×2.5 H07RN-F	3×1.5 H05VV-F
ULS 24 / ICI 24	220~240V N~	16	2.5	3×2.5 H07RN-F	3×1.5 H05VV-F
ULS 36 / ICI 36	220~240V N~	32	6.0	3×6.0 H07RN-F	3×1.5 H05VV-F
ULT 36 / ICI 36	380~415V 3N~	20	4.0	5×4.0 H07RN-F	3×1.5 H05VV-F
ULT 45 / ICI 45	380~415V 3N~	20	4.0	5×4.0 H07RN-F	3×1.5 H05VV-F
ULT 50 / ICI 50	380~415V 3N~	20	4.0	5×4.0 H07RN-F	3×1.5 H05VV-F

1、The power cable used in the unit is copper cable, the working temperature should not exceed the specified value.

2、If the power cable is longer than 15 meters, please enlarge the cross section of power cableadequately, in order to avoid the accident due to overload.

● **Requirement for ground**

☆ Air conditioner is the I class electric appliance, thus please do conduct reliable grounding measure.

☆ The yellow-green two-color wiring of air conditioner is grounding wire and can not be used for other purposes. It cannot be cut off and be fixed by screw, otherwise it would cause electric shock.

☆ The user must offer the reliable grounding terminal. Please don't connect the grounding wire to the following places:

① Water pipe;

② Gas pipe;

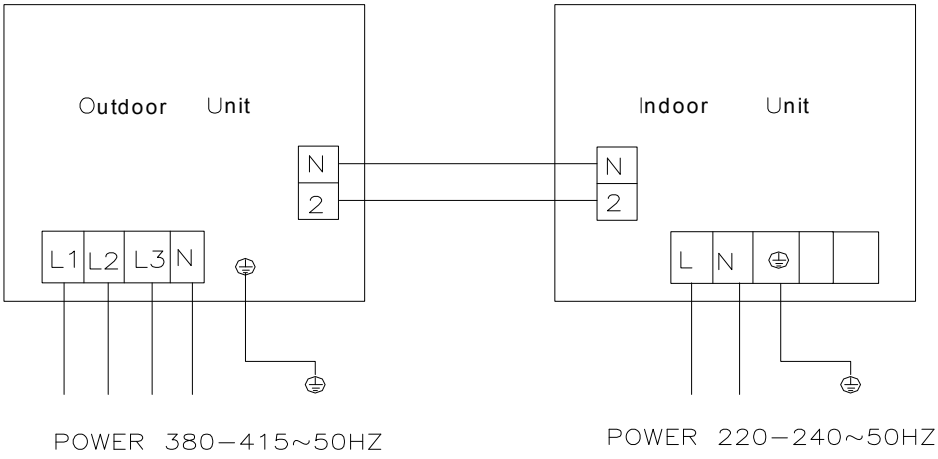
③ Blowing pipe;

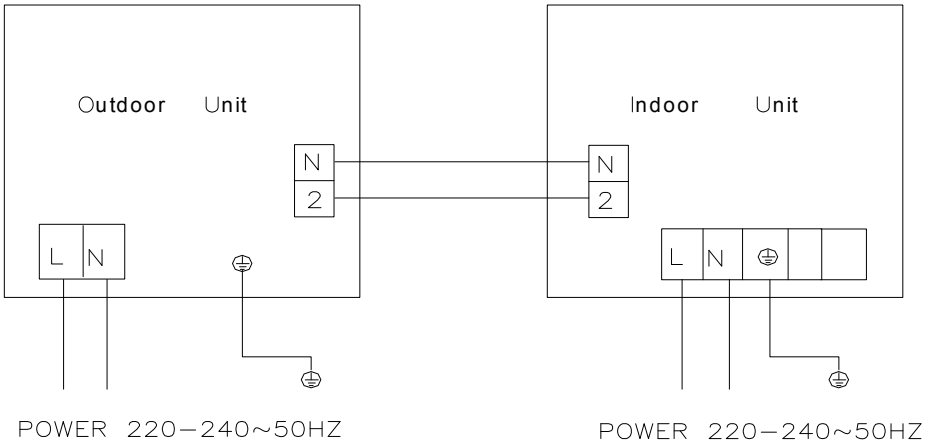
④ Other places that professional personnel consider them unreliable.

The power cable, communication wire connection between indoor and outdoor

⚠ Warning:

The signal wire between indoor and outdoor unit shall be installed in the shielded bushing.





11. **Test operation**

1. Prepare for test

(1) Do not turn on the power switch before all installation is finished.

(2) Connect wires correctly and firmly.

(3) Open the check valve.

(4) Remove all dust.

2. Testing

(1) Turn on the power switch and press ON/OFF button.

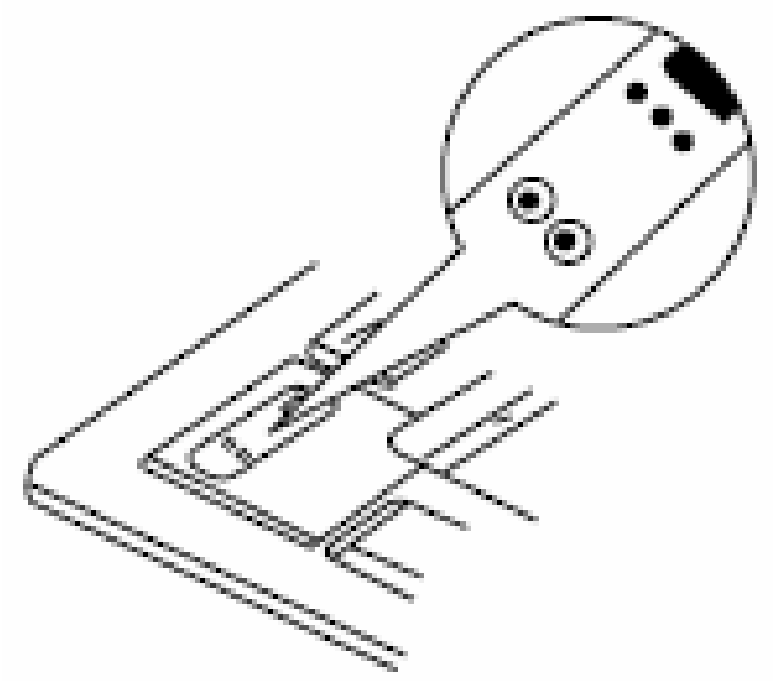
(2) Press MODE button select COOL, HEAT, FAN, etc to test whether it operates normally.

3. Emergency operation.

When the batteries fail or when the remote controller is missing, operate as shown below.

* On stopping you can press the AUTO button on cover NO. Ⅱ, until it is in AUTO mode.

The cover NO. Ⅱ is the part of the panel. As the below picture .



The air conditioner select from COOL, HEAT, DRY, FAN modes automatically.

* On operating, press the AUTO button, the air conditioner will stop.

Note:	The "TEST" button on the cover No. Ⅱ is specially for testing the air conditioner. When pressing it ,the air conditioner will be forced to operate or stop. Do not press it when air conditioner is in normal operation.

For the following items, take special care during construction and check after installation is finished.

Items to check	If not properly done, what is likely to happen	Check
Is the indoor unit fixed firmly?	The unit may drop, vibrate or make noise.	
Is the gas leakage test finished?	It may result in insufficient cooling.	
Is the unit fully insulated?	Condensate water may drip.	
Does drainage flow smoothly?	Condensate water may drip.	
Does the power supply voltage correspond to that shown on the nameplate?	The unit may malfunction or the components burn out.	
Are wiring and piping correct?	The unit may malfunction or the components burn out.	
Is the unit safely grounded?	Risk of electric leakage.	
Is wiring size according to specifications?	The unit may malfunction or the components burn out.	
Is something blocking the air outlet or intake of either the indoor or outdoor unit?	It may result in insufficient cooling.	
Have records of refrigerant piping length and additional refrigerant change been made?	Volume of refrigerant change in the system is not clear.	

Note to the installer:

Be sure to instruct the customer how to operate the system and show him/her the attached operation manual.

Be sure the electric supply that user applies is beyond the bounds of tolerances (+/-10%, +/-1Hz).

The ambient temperature should be at 5-40°C ,and the humidity be at 30-95% .

Transport/storage temperature should be at -25-55°C and for short period not exceeding 24h at up to +70°C.

The installation altitude is beyond the hight of 1000m.

Appendix:

Air conditioner nominal working condition and working range:

Test condition	Indoor side		Outdoor side	
	DB(℃)	WB(℃)	DB(℃)	WB(℃)
Nominal cooling	27	19	35	24
Nominal heating	20	－－	7	6
Rated cooling	32	23	43	26
Low temp. cooling	21	15	18(-7)	－－
Rated heating	27	－－	24	18
Low temp. heating	20	－－	－7	－8

Note:

1. The design of this unit conforms to the requirements of EN14511 standard.
2. The air volume is measured at the relevant standard external static pressure.
3. Cooling (heating) capacity stated above is measured under nominal working conditions corresponding to standard external static pressure. The parameters are subject to change with the improvement of products, in which case the values on nameplate shall prevail.
4. In this table, the outdoor side DB temperature of low temp. cooling include two values, the one in the bracket is the working condition of the appliance with function of low temp. cooling .